rattus norvictalurus p ambystoma m rattus norv

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mus musculu oncorhynchu

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brachydanio

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HS1A_RAT
QB8686
Q7SZM7
GGRYT8
HSTT_MOUSE
HSTT_MOUSE
HSTT_ONCMY
                                          Q801X8
Q91ZU5
Q91ZU4
Q91ZU4
G9GWU1
HS7C BOVIN
Q6TEĞ5
Q6XVG4
Q76M60
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Q27121
HS70 PLEWA
Q6RYT7
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Q6S4R6
HS72 MOUSE
Q99KD7
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Q801X9
HS70_CHICK
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Q8AXL6
Q86MC3
HS72_RAT
Q7PYR5
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1 KSENVQDLLLLDVAPLSLGL......FGAQGPKGGSGSGPTIEEVD
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Copyright (c) 1993 - 2005 Compugen Ltd.
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Listing first 100 summaries
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QGESE
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penaeus van penaeus mon

cotesia rub

brugia paha brugia mala megachile r homo sapien

urechis cau pleurodeles patinopecte mus musculu

crassostrea megachile r brachydanio

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QQ7zvj1 Q6nzQ0 Q8nzQ0 Q8nzQ0 Q91zu5 Q91zu5 Q91zu5 Q91zu5 Q91zu5 Q91zu6 Q6xvg4 Q6xvg4 Q6xvg4 Q6xvg4 Q6xvg4 Q773 Q6xvg4 Q738B6 Q738B6 Q738B6 Q6xvg4 Q738B6 Q6xvg4 Q738B6 Q6xvg4 Q6xvq4 Q6xvq4 Q6xvq4 Q6x

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paralichthy

gallus gall

setaria dig macrobrachi mus musculu

rattus norv mesocestoid

wuchereria heterodera heterodera

capra hircu carassius a gallus gall paralichthy

ALIGNMENTS

oreochromis oncorhynchu ceratitis c

chi ronomus

Q91233 Q17310 Q8it15

rattus norv anopheles g

Q8ay16 Q86mc3 P14659 Q7pyr5 Q9u639 P34933

numida mele balanus amp

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PERCURNICE FROM N.A.

TISSUB-Muscle, Pancreas, and Skin;

MEDLINE-22388257; PubMed=12477932; DOI=10.1073/pnas.242603899;

A Straubberg R.L., Feingold B.A., Grouse L.H., Derge J.G.,

Riausers R.D., Colling F.S., Wagner L., Shenmen C.M., Schuler G.D.,

A Altschul S.F., Zeeberg B., Buetow K.H., Schaefer C.F., Bhat N.K.,

A Inschul S.F., Jordan H., Moore T., Max S.L., Rubin G.M., Heieh F.,

Diatchenko L., Marusina K., Farmer A.A., Rubin G.M., Heieh F.,

Bronstein M.J., Ugdin T.B., Toshiyuki S., Carninci P., Prange C.,

Bronstein M.J., Ugdin T.B., Toshiyuki S., Carninci P., Prange C.,

Bronstein M.J., Ugdin T.B., Toshiyuki S., Carninci P., Prange C.,

Bosak S.A., McEwan P.J., McKernan K.J., Malek J.A., Gunaratne P.H.,

Robard S. Wolfer P.J., McKernan K.J., Malek J.A., Gunaratne P.H.,

Richarde S. Wolfer S., Ketteman M., Saciale S., Sanchez A.,

Willalon D.K., Muzny D.M., Sodergren B.J., Lu X., Gibbs R.A.,

Willalon D.K., Muzny D.M., Sodergren B.J., Lu X., Gibbs R.A.,

Willian A., Wadan A., Young A.C., Shevchenko Y., Boulfard G.G.,

Blakesley R. W., Touchman J. W., Green B.D., Dickson M.C.,

Butterfield Y.S.N., Krzywinski M.I., Skalska U., Smailus D.E.,

Bronnertin and initial analysis of more than 15,000 full-length human
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     SEQUENCE FROM N.A. (HSPAIA AND HSPAIB).
Shiina S., Tamiya G., Oka A., Inoko H.;
"Homo sapiens 2,229,817bp genomic DNA of 6p21.3 HLA class I region.";
Submitted (SEP-1999) to the EMBL/GenBank/DDBJ databases.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         MEDLINE-89184548; PubMed-2538825;
Sargent C.A., Dunham I., Trowsdale J., Campbell R.D.;
"Human major histocompatibility complex contains genes for the major
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               SEQUENCE FROM N.A.
MEDLINE=86016721; PubMed=3931075;
Hunt C., Morimoto R.I.;
"Conserved features of eukaryotic hsp70 genes revealed by comparison with the nucleotide sequence of human hsp70.";
Proc. Natl. Acad. Sci. U.S.A. 82:6455-6459(1985).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Rowen L., Madan A., Qin S., Shaffer T., James R., Ratcliffe A., Abbasi N., Dickhoff R., Loretz C., Madan A., Dors M., Young J., Lasky S., Hood L.; "Sequence of the human major histocompatibility complex plass III
                                                                                                                                                                                                                                                                                                                                                                                             Homo sapiens (Human).
Bukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
Mammalia; Eutheria; Primates; Catarrhini; Hominidae; Homo.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Milner C.M., Campbell R.D.; "Structure and expression of the three MHC-linked HSP70 genes."; Immunogenetics 32:242-251(1990).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Submitted (OCT-1999) to the EMBL/GenBank/DDBJ databases.
                                                                HS71 HUMAN STANDARD; PRT; 641 AA. PP8151 HUMAN STANDARD; Q9UQM0; Q9UQL9; Q9UQM0; 01-AUG-1988 (Rel. 08, Created) 01-FBE-1994 (Rel. 28, Last sequence update) 25-OCT-2004 (Rel. 45, Last annotation update) Heat shock 70 kDa protein 1 (HSP70.1) (HSP70-1/HSP70-2) Name-HSPA1A; Synonyms-HSPA1;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              roc. Natl. Acad. Sci. U.S.A. 99:16899-16903(2002)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       heat shock protein HSP70.";
Proc. Natl. Acad. Sci. U.S.A. 86:1968-1972(1989).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           [3] SEQUENCE FROM N.A. (HSPAIA AND HSPAIB).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   SEQUENCE OF 1-36 AND 360-424 FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                SEQUENCE FROM N.A.
MEDLINE=91055806; PubMed=1700760;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               NCBI_TaxID=9606;
                                                                                                                                                                                                                                                                                                                                                                  Name=HSPA1B;
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This SWISS-PROT entry is copyright. It is produced through a collaboration between the Swiss Institute of Bioinformatics and the EMBL outstation-the European Bioinformatics Institute. There are no restrictions on its was by non-profit institutions as long as its content is in no way modified much statement is not removed, Usage by and for commercial entities requires a license agreement (See http://www.isb-sib.ch/announce/or send an email to license@isb-sib.ch).
                                                                                                                                X-RAY CRYSTALLOGRAPHY (2.3 ANGSTROMS) OF 1-382.

X-RAY CRYSTALLOGRAPHY (2.3 ANGSTROMS) OF 1-382.

X MEDLINE=99234376; PubMed=10216320; DoI=10.1107/S0907444999002103;

X GSIDIUK J. Waleh M.A., Freeman B.C., Morimoto R.L., Joachimiak A.;

"Structure of a new crystal form of human hap70 ATPase domain.";

L Acta Crystallogr. D 55:1105-1107(1999).

Preexistent proteins against aggregation and mediate the folding of newly translated polypeptides in the cytosol as well as within organelles. The HSP70s in mitochondria and the endoplasmic reficulum play an additional role by providing a driving force for protein translocation. They are involved in signal transduction pathways in cooperation with HSP90. They participate in all these processes through their ability to recognize nonnative esegments with a net hydrophobic character exposed by polypeptides segments with a net hydrophobic character exposed by polypeptides during translation and membrane translocation, or following
                                          Drabent B., Genthe A., Benecke B.-J.;
In vitro transcription of a human hsp 70 heat shock gene by extracts prepared from heat-shocked and non-heat-shocked human cells.";
Nucleic Acids Res. 14:8933-8948 (1986).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                            -i- SIMILARITY: Belongs to the heat shock protein 70 family.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          GO; GO:0005737; C:cytoplasm; TAS.
GO; GO:0005634; C:nucleus; TAS.
GO; GO:0003773; F:heat shock protein activity; TAS.
GO; GO:000402; P:mRNA catabolism; TAS.
InterPro; IPR001023; HSP70.
             SEQUENCE OF 1-22 AND 618-641 FROM N.A. MEDLINE=8706768; PubMed=3786141;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  EMEL; AF134726; AAD21816.1; --
EMEL; AF134726; AAD21815.1; --
EMEL; AP000503; BAB63300.1; --
EMEL; AP000503; BAB63299.1; --
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  EMBL; X04676; CAA28381.1; -.
EMBL; X04677; CAA28382.1; -.
EMBL; X04677; CAA28382.1; -.
PIR; A29160; A29160.
PIR; A45871; A45871.
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ProDom; PD000089; HSp70; 1.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ProDom; PD000089; Hsp70; 1.
TIGRFAMs; TIGR01991; HscA; 1.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 EMBL; MS9828; AAA63226.1; -. EMBL; MS9830; AAA63227.1; -.
                                                                                                                                                                                                                                                                                                                                                                                                                                           stress-induced damage.
INDUCTION: By heat shock.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    M24743; AAA59844.1; -. M24744; AAA59845.1; -.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   PDB; 1HJO; X-ray; A=3-382.
PDB; 1S3X; X-ray; A=1-382.
SWISS-2DPAGE; P08107; HUMAN.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Genew; HGNC:5232; HSPAIA.
Genew; HGNC:5233; HSPAIB.
H-InvDB; HIX0005733; --
H-InvDB; HIX0005734; --
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                EMBL; M11717; AAA52697
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  I59139; I59139.
I79540; I79540.
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PIR;
PDB;
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TNDKGRLSKEEIERMVQEAEKYKAEDEIQRERVSAKNALESYAFNMKSAVEDEGLKGKIS
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1 KSENVODILILIDVAPLSIGLETAGGVMTALIKRNSTIPTKQTQIPTTYSDNQPGVLIQVY
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           384 KSENVQDLLLLDVAPLSLGLETAGGVMTALIKRNSTIPTKQTQIFTTYSDNQPGVLIQVY
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Gaps
                                                                                                                                                                                                                                                                                                                                               Sus scrofa (Pig).
Sukaryota; Metazoa, Chordata, Craniata; Vertebrata; Buteleostomi;
Mammalia; Butheria; Cetartiodactyla; Suina; Suidae; Sus.
NCBI_TaxID=9823;
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98.6%; Score 1296; DB 2; Length 641;
Best Local Similarity 98.4%; Pred. No. 5.1e-72;
Matches 254; Conservative 2; Mismatches 2; Indels
                                                                                                                                                                                                                                                                          Last sequence update)
Last annotation update)
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                                                                                                                                                                                                                                                         Created)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                PRT;
                                                                                           241 AQGPKGGSGSGPTIEEVD 258
                                                                                                            AQGPKGGSGSGPTIEEVD 641
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    241 AOGPKGGSGSGPTIEEVD 258
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         AQAPKGGSGSGPTIEEVD 641
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HS71 BOVIN
LD HS71 BOVIN STANDARD;
LD HS71 BOVIN STANDARD;
LAC Q27975; Q27964;
DT 01-NOV-1997 (Rel. 35, Created)
                                                                                                                                                                                                                                                05-JUL-2004 (TrEMBLrel. 27, Cl
05-JUL-2004 (TrEMBLrel. 27, Li
05-JUL-2004 (TrEMBLrel. 27, Li
Heat shock protein 70.2.
Name=hsp70.2;
                                                                                                                                                                                                                       PRELIMINARY;
                        181
                                                                                                                             624
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Q6S4N2;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   TNDKGRLSKEEIERWVQEAEKYKAEDEVQRERVSAKNALESYAFNMKSAVEDEGLKGKIS 180
                                                          Heat shock; Multigene family.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Length 641;
                                                                         I -> V (in Ref. 2).

B -> D (in Ref. 3; AAD21816)

A -> G (in Ref. 2).

N issing (in Ref. 2).

N -> S (in Ref. 3; AAD21815)
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larity 100.0%; Pred. No. 3.9e-73;
Conservative 0; Mismatches 0;
                                                        Chaperone;
   HSP70_1;
HSP70_2;
HSP70_3;
-binding; (
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         164
166
174
182
PROSITE; PS00297; H6
PROSITE; PS00329; H6
PROSITE; PS00329; H6
PROSITE; PS01036; H3
PROSITE; PS01036; H6
PROSITE; PS01036; H6
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Best Local Similarity
Matches 258; Conser
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444 EGERAMTRDNNLLGRFELSGIPPAPRGVPQIEVTFDIDANGILNVTATDKSTGKANKITI 503
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Anim. Genet. 25:196-196 (1994).

Anim. Genet. 25:196-196 (1994).

PUNCTION: In cooperation with other chaperones, HSP70s stabilize preexistent proteins against aggregation and mediate the folding of newly translated polypeptides in the cytosol as well as within organelles. The HSP70s in mitochondria and the endoplasmic reticulum play an additional rolle by providing a driving force for protein translocation. They are involved in signal transduction pathways in cooperation with HSP90. They participate in all these processes through their ability to recognize nonnative conformations of other proteins. They bind extended peptide segments with a net hydrophobic character exposed by polypeptides during translation and membrane translocation, or following streas-induced damage.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ö
                                                                                                                                                                                                                                                                                                                                                                                         STRAIN=Angus;
MEDLINE=95030563; PubMed=7943958;
Grosz M.D., Skow L.C., Stone R.T.;
"An Alui polymorphism at the bovine 70 kD heat-shock protein-1 (HSP70-1) locus.";
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Gaps
                                                                                                                                                                                                                                                                      Gutierrez J.A., Guerriero V.; "Chemical modifications of a recombinant bovine stress-inducible 70 modifications of a recombinant bovine stress-inducible 70 kDa heat-shock protein (Hsp70) mimics Hsp70 isoforms from tissues."; Biochem. J. 305:197-203 (1995).
                                                                                                Eukaryota, Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
Mammalia; Eutheria; Cetartiodactyla; Ruminantia; Pecora; Bovidae;
Bovinae; Bos.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ö
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    SIMILARITY: Belongs to the heat shock protein 70 family.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  TIGRFAMS; TIGR01991; nac., -
PROSITE; PS00297; HSP70_1; 1.
PROSITE; PS00329; HSP70_2; 1.
PROSITE; PS01036; HSP70_3; 1.
ATP-binding; Chaperone; Heat shock; Multigene family.
ATP-binding; Chaperone; Heat shock; Multigene family.
      01-NOV-1997 (Rel. 35, Last sequence update) 05-UTL-2004 (Rel. 44, Last annotation update) Heat shock 70 kDa protein 1 (HSP70-1).
                                                                                                                                                                                                                              TISSUE=Skeletal muscle;
MEDLINE=95126904; PubMed=7826329;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 PRINTS; PRO0301; HEATSHOCK70.
ProDom; PD000089; Hsp70; 1.
TIGREAMS; TIGR01991; HscA; 1.
                                                                                                                                                                                                                                                                                                                                                                        SEQUENCE OF 212-641 FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           EMBL; U09861; AAA73914.1; -. EMBL; U02891; AAA03450.1; -.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Best Local Similarity 98.8%;
Matches 255; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        HSSP; P08107; 1HJO.
InterPro; IPR001023; Hsp70.
Pfam; PF00012; HSP70; 1.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  EMBL; U02891; AAA0345
PIR; S53357; S53357.
                                                                                      Sos taurus (Bovine).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Query Match
Best Local Similarity
                                                                                                                                                                                                           SEQUENCE FROM N.A.
                                                                                                                                                                   NCBI_TaxID=9913;
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BGERAMTKDNNLLGRFELSGIPPAPRGVPQIEVTFDIDANGILNVTATDKSTGKANKITI 120

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1 KSENVQDLLLLDVAPLSLGLETAGGVMTALIKRNSTIPTKQTQIFTTYSDNQPGVLIQVY

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Rowalski J., Gilbert S.A., van Drunen-Littel-Van den Hurk S.,
A wan den Hurk J., Gilbert S.A., van Drunen-Littel-Van den Hurk S.,
A van den Hurk J., Babiuk L.A., Zamb T.J.;
A van den Hurk J., Babiuk L.A., Zamb T.J.;
A "Heat-shock promoter-driven synthesis of secreted bovine herpesvirus
T glycoproteains in transfected cells.";
A grocarcians in transfected cells.";
C -: FUNCTION: In cooperation with other chaperones, HSP70s stabilize
Dreckistent proteins against aggregation and mediate the folding
C of newly translated polypeptides in the cytosol as well as within
C organelles. The HSP70s in mittochondria and the endoplasmic
C reticulum play an additional role by providing a driving force for
Drocein translocation. They are involved in signal transduction
Dethways in cooperation with HSP90. They participate in all these
C conformations of other proteins. They bind extended peptide
S degments with a net hydrophoic character exposed by polypeptides
C stress-induced damage.
C stress-induced damage.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              This SWISS-PROT entry is copyright. It is produced through a collaboration between the Swiss Institute of Bioinformatics and the EMBL outstation the European Bioinformatics Institute. There are no restrictions on its use by non-profit institutions as long as its content is in no way modified and this statement is not removed. Usage by and for commercial entities requires a license agreement (See http://www.isb-sib.ch/announce/or send an email to license@ib.ch).
                                                                                    240
                                                                                                           121 TNDKGRLSKERIERMYQEAEKYKAEDEVQRERVSAKNALESYAFNMKSAVEDEGLKGKIS 180
                        181 EADKKKVLDKCQEVISWLDANTLAEKDEFEHKRKELEQVCNPIISGLYQGAGGPGFG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         MEDLINE=94070117; PubMed=8249428; DOI=10.1016/0264-410X(93)90069-A;
                                                                                                                                                                                                                                                                                                                                                                                                                                                       Name-HSP70-2;
Doss taurus (Bovine).
Eukaryota, Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
Mammalia; Eutheria; Cetartiodactyla; Ruminantia; Pecora; Bovidae;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             -!- INDUCTION: By heat shock.
-!- SIMILARITY: Belongs to the heat shock protein 70 family.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Grosz M.D., Skow L.C.;
Submitted (JAN-1994) to the EMBL/GenBank/DDBJ databases.
                                                                                                                                                                                                                                                                                                                            HS72_BOVIN STANDARD; PRT; 641 AA. 027955; Q28122; 01-NOV-1997 (Rel. 35, Created) 01-NOV-1997 (Rel. 35, Last sequence update) 05-JUL-2004 (Rel. 44, Last annotation update) Heat shock 70 kDa protein 2 (HSP70-2).
                                                                                                                                                                           241 AQGPKGGSGSGPTIEEVD 258
                                                                                                                                                                                                                   624 AQGPKGGSGSGPTIEEVD 641
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               HSSP; P08107; 1HJO.
InterPrc; IPR001023; Hsp70.
Pfam; PP00012; HSP70; 1.
PRINTS; PR00301; HEATSHOCK70.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               EMBL; U02892; AAA03451.1; -. EMBL; M98823; AAA30568.1; -. PIR; I45911; I45911.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               SEQUENCE OF 1-28 FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Bovinae; Bos.
NCBI_TaxID=9913;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                STRAIN=Angus;
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384 KSENVQDLLLDVAPLSLGLETAGGVWTALIKRNSTIPTKQTQIFTTYSDNQPGVLIQVY 443
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          TNDKGRLSKEEIERMVQEAEKYKAEDEVQRERVSAKNALESYAFNMKSAVEDEGLKGKIS 180
                                                                                                   EADKKKVLDKCQEVISWLDANTLABKDEFEHKRKELEQVCNPIISGLYQGAGGPGFGG 240
                                                                                                                                                                EADKKKVLDKCQEVISWLDANTLAEKDEPEHKRKELEQVCNPIISRLYQGAGGGGGGGGG 623
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             TNDKGRLSKEEIERWVOEAEKYKAEDEVORERVSAKNALESYAFNMKSAVEDEGLKGKIS 563
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           EADKKKVLDKCQEVISWLDANTLAEKDEFEHKRKELEQVCNPIISGLYQGAGGPGFG 240
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            TNDKGRLSKEEIERMVQEAEKYKAEDEVQRERVSAKNALESYAFNMKSAVEDEGLKGKIS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              EGERAMTKONNLLGRFELSGIPPAPRGVPQIEVTFDIDANGILNVTATDKSTGKANKITI
                  EGERAMTKDNNLLGRFELSGIPPAPRGVPQIEVTFDIDANGILNVTATDKSTGKANKITI
                                               EGERAMTRDNNLLGRFELSGIPPAPRGVPQIEVTFDIDANGILNVTATDKSTGKANKITI
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1 KSENVQDLLLLDVAPLSLGLETAGGVMTALIKRNSTIPTKQTQIFTTYSDNQPGVLLQVY
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Gaps
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N MAN

EXECUTION N.A.

MEDLINE=22640451; PubMed=12755819;

MEDLINE=22640451; PubMed=12755819;

Sugianct M., Furrucka H., Sugianct Y.;

Sugianct M., Furrucka H., Sugianct Y.;

T myopathy of diaphragmatic muscles in Holstein-Friesian cattle.";

It myopathy of diaphragmatic muscles in Holstein-Friesian cattle.";

I. Anim. Genet. 34:191-197(2003).

C -1- SIMILARITY: Belongs to the heat shock protein 70 family.

DR EMBL; AY149618; AAN78092.1; -.

DR EMBL; AY149618; AAN78092.1; -.

DR FEMB; AY149619; AAN78092.1; -.

DR FOGO (C) COO05524; F.ATP binding; IEA.

DR FOGO (C) COO05524; F.ATP binding; IEA.

DR Prodom; PROMO123; HSP70. 1.

DR PROSITE; PS00129; HSP70. 1.

DR PROSITE; PS00129; HSP70. 1:

DR PROSITE; PS00136; HSP70. 2; 1.
                                                                                                                                                                                                                                                                                                                                                                                                                                            Bos taurus (Bovine).
Eukaryota, Metazoa, Chordata, Craniata, Vertebrata, Euteleostomi,
Mammalia, Eutheria, Cetartiodactyla, Ruminantia, Pecora, Bovidae,
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                                                                                                                                                                                                                                                                                                                                                            01-OCT-2003 (TrEMBLrel. 25, Created)
01-OCT-2003 (TrEMBLrel. 25, Last sequence update)
05-UUL-2004 (TrEMBLrel. 27, Last annotation update)
Heat-Shock 70-kilodalton protein 1A.
                                                                                                                                                                                                                                                                                                                               641 AA.
                                                                                                                                                                                                                                                                                                                               PRT;
                                                                                                                                                                                                                                 624 AQGPKGGSGSGPTIEEVD 641
                                                                                                                                                                                                                241 AQGPKGGSGSGPTIEEVD 258
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Best Local Similarity 98.84
Matches 255; Conservative
                                                                                                                                                                                                                                                                                                                               PRELIMINARY;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             NCBI_TaxID=9913;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Bovinae; Bos
                                                                                                                                                                                                                                                                                                                                                                                                                             Name=HSPA1A;
                                                                                                                                                                               564
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                                                                                                                                                                                                                                                              EGERAMIKDNNLLGRFELSGIPPAPRGVPQIEVTFDIDANGILNVTATDKSTGKANKITI 120
                                                                                                                                                                                                                                                                               TNDKGRLSKEEIERMVQEAEKYKAEDEVQRERVSAKNALESYAFNMKSAVEDEGLKGKIS 180
                                                                                                                                                                                                                                                                                                                                                                                              EADKKKVLDKCQEVISWLDANTLAEKDEFEHKRKELEQVCNPIISGLYQGAGGPGPGGFG 240
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                                                                                                                                                                Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Bos taurus (Bovine).
Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
Mammalia; Eutheria; Cetartiodactyla; Ruminantia; Pecora; Bovidae;
Bovinae; Bos.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Submitted (JUN-2004) to the EMBL/GenBank/DDBJ databases.

- I - SIMILARITY: Belongs to the heat shock protein 70 family.

- I - SIMILARITY: Belongs to the heat shock protein 70 family.

R GO; GO:0006457; AAT75223.1;

R GO; GO:0006457; P:protein folding; IEA.

R GO; GO:0006986; P:protein folding; IEA.

InterPro; IPR001023; HSp70.

R Pfam; PF00012; HSp70.

R PROSITE; PS003029; HSP70. 1;

R PROSITE; PS00329; HSP70. 1;

R PROSITE; PS00329; HSP70. 2; I.

R PROSITE; PS00329; HSP70. 2; I.

R ATP-binding; Heat shock.
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Lakshmikuttyamma A., Selvakumar P., Anderson D.H., Datla R.S.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Length 641;
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                                                                                                                                                                2; Indels
                                                                                                                              98.6%; Score 1295; DB 1; Length 98.8%; Pred. No. 5.9e-72; ive 1; Mismatches 2; Indels
           TIGREAMS; TIGRO1991; HSCA; 1.
PROSITE; PS00297; HSP70_1; 1.
PROSITE; PS00329; HSP70_2; 1.
PROSITE; PS01036; HSP70_3; 1.
ATP-binding; Chaperone; Heat shock; Multigene family.
SEQUENCE 641 AA; 70228 MW; 229C19EEBBF610DF CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            70231 MW; 6B3F9E6B8E8FDFB0 CRC64;
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25-OCT-2004 (TrEMBLrel. 28, Last sequence update)
25-OCT-2004 (TrEMBLrel. 28, Last annotation update)
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ProDom; PD000089; Hsp70; 1
                                                                                                                            Query Match
Best Local Similarity 98.8
Matches 255; Conservative
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Best Local Similarity 98.8
Matches 255; Conservative
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                                                                                                                                                                                                                                                            Canis familiaris (Dog).
Eukaryota, Metazoa, Chordata, Craniata, Vertebrata, Buteleostomi,
Mammalia, Butheria, Carnivora, Fissipedia, Canidae, Canis.
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         98.2%; Score 1291; DB 2; Length 641; 98.1%; Pred. No. 1e-71; ive 3; Mismatches 2; Indels (
                                                                                                                                                                                                                                                                                                                                                                 70070 MW; D1D80C3689346C88 CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     GO; GO:0005524; F:ATP binding; IEA.
GO; GO:000647; P:PCTein folding; IEA.
GO; GO:0006487; P:PCTein folding; IEA.
INTERPO: IPRO01023; HSP70.
PERM: PF00012; HSP70, 1.
PCDOM: PD000089; HSP70, 1.
PROSITE: PS00297; HSP70_1; 1.
PROSITE: PS00329; HSP70_2; 1.
PROSITE: PS01329; HSP70_2; 1.
ATP-binding; Heat shock.
                                                                                                                                                                                      Last sequence update)
Last annotation update)
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HS71 CERAE
TO HS71 CERAE
TO HS71 CERAE
TO HS72 CERAE
TO HS72 CERAE
TO HS72 CERAE
TO HS73 CERAE
TO HS74 CERAE
TO HS75 CE
                                                                                                                                                                     Created)
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                                  624 AQGPKGGSGSGPTIEEVD 641
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                                                                                                                                                                                                                                                                                                             NCBI_TaxID=9615;
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                                                                                                                                                                          IISSUB=Kidney;
MEDLINE=95080396; PubMed=7988690; DOI=10.1016/0014-5793(94)01210-5;
Cercopithecus aethiops (Green monkey) (Grivet).
Bukaryota, Metazoa, Chordata, Craniata, Vertebrata, Euteleostomi,
Mammalia, Butheria, Primates, Catarrhini, Cercopithecidae,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      PRINTS; PROGOSO; HEATSHOCK70.

PRODOM: PD000089; HBAPO; 1.

TIGRPAMS; TIGRO1991; HBCA; 1.

PROSITE; PS000297; HSP70_1; 1.

PROSITE; PS01036; HSP70_2; 1.

PROSITE; PS01036; HSP70_2; 1.

ATP-binding; Chaperone; Heat shock; Multigene family.

SEQUENCE 638 AA; 69920 MW; D55076A0FFAB6AB3 CRC64;
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                                                                           Cercopithecinae; Cercopithecus.
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InterPro; IPR001023; Hsp70.
Pfam; PF00012; HSP70; 1.
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                                                                                                                                                 SEQUENCE FROM N.A.
                                                                                                 NCBI_TaxID=9534;
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384 KSENVQDLLLLDVAPLSLGLETAGGWIAL-SRNSTIPTKQTQIFTTYSDNQPGVLIQVY 442
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      563 EADKKKVLDKCQEVISWLDGPTLAEKDEFEHKRKELEQVCNPIITGLYQGAGGPGAGGFG 622
564 EADKKKVLDKCQEVISWLDANTLAEKDEFEHKRKELEQVCNPIISGLYQGAGGPGPGFG 623
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            121 TNDKGRLSKEEIERMVQEAEKYKAEDEVQRERVSAKNALESYAFNMKSAVEDEGLKGKIS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      EADKKKVLDKCQEVISWLDANTLAEKDEFEHKRKELEQVCNPIISGLYQGAGGPGGFG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               61 EGERAMIKDNNLLGRFELSGIPPAPRGVPQIEVTFDIDANGILNVTATDKSTGKANKITI
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  443 EGERAMTRDNNLLGRFELSGIPPAPRGVPQIEVTFDIDANGILNVTATDKSTGKANKITI
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     1 KSENVQDLLLLDVAPLSLGLETAGGVMTALIKRNSTIPTKQTQIFTTYSDNQPGVLIQVY
                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
Mammalia; Eutheria; Carnivora; Fissipedia; Canidae; Canis.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  / Match 95.8%; Score 1258.5; DB 2; Length 640; Local Similarity 96.5%; Pred. No. 1.1e-69; nes 249; Conservative 3; Mismatches 5; Indels 1;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Abe K., Kano R., Hasegawa A.;
Submitted (NOV-2001) to the EMBL/GenBank/DDBJ databases.
--- SIMILARITY: Belongs to the heat shock protein 70 family.
EMBL; AB075027; BAB78505.1; -.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   HSSP; D00107; 153X.

GO; GO: 0005524; F: ATP binding; IRA.

GO; GO: 0005524; F: From the protein folding; IRA.

GO; GO: 0006589; F: Protein folding; IRA.

GO; GO: 0006589; F: Protein folding; IRA.

PEAM; PF00012; HSP70; 1.

PROSITE; PS0029; HSP70; 1.

PROSITE; PS0029; HSP70; 1.

PROSITE; PS0039; HSP70; 1.

PROSITE; PS01036; HSP70; 1.

SEQUENCE 640 AA; 69934 MW; 402F3E91871BF87F CRC64;
                                                                                                                                                                                                                                                                                                       Created)
Last sequence update)
Last annotation update)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  007439; P42853;
01-FEB-1995 (Rel. 31, Created)
01-FEB-1995 (Rel. 31, Last sequence update)
01-FEB-1995 (Rel. 44, Last annotation update)
Heat shock 70 kDa protein 1/2 (HSP70.1/2)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              641 AA
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       623 AQAPKGGSGSGPTIEEVD 640
                                                                                                       624 APDLKGGSGSGPTIEEVD 641
                                                                                                                                                                                                                                                                                                    01-MAR-2002 (TrEMBLrel. 20, 01-MAR-2002 (TrEMBLrel. 20, 01-MAR-2004 (TrEMBLrel. 26,
                                                         241 AQGPKGGSGSGPTIEEVD
                                                                                                                                                                                                                                                 PRELIMINARY;
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                                                                                                                                                                                                                                                                                                                                                                                                                                              Canis familiaris (Dog).
                                                                                                                                                                                                                                                                                                                                                                                          Heat shock protein 70.
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SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 NCBI_TaxID=9615;
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                                                                                                                                                                                                                                                                                                                                                                                                                    Name=hsp70
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      181
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Matches
                                                                                                                                                                                             RESULT 10
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           This SWISS-PROT entry is copyright. It is produced through a collaboration between the Swiss Institute of Bioinformatics and the EMBL outstation-the European Bioinformatics Institute. There are no restrictions on its use by non-profit institutions as long as its content is in no way modified and this statement is not removed. Usage by and for commercial entities requires a license agreement (See http://www.isb-sib.ch/announce/or send an email to license@isb-sib.ch).
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      884 KSENVQDLLLLDVAPLSLGLETAGGVMTALIKRNSTIPTKQTQIFTTYSDNQPGVLLQVY 443
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             EGERAMTKONNLLGRFELSGIPPAPRGVPQIEVTFDIDANGILNVTATDKSTGKANKITI 120
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    503
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    "Complete mucleotide sequence of a porcine HSP70 gene.";
"Complete mucleotide sequence of a porcine HSP70 gene.";
Immunogenetics 35:286-289(1992).

-!- FUNCTION: In cooperation with other chaperones, Hsp70s stabilize preexistent proteins against aggregation and mediate the folding of newly translated polypeptides in the cytosol as well as within organelles. These professes participate in all these processes through their ability to recognize nonnative conformations of other proteins. They bind extended peptide segments with a net hydrophopic character exposed by polypeptides during translation and membrane translocation, or following stress-induced damage.
-!- SIMILARITY: Belongs to the heat shock protein 70 family.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             EGERAMTRDNNLLGRFELSGIPPAPRGVPQIEVTFDIDANGILNVTATDKSTGKANKITI
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Gaps
                                                                                                                                                                                                                                                                                                                                                           Eukaryota, Metazoa, Chordata, Craniata, Vertebrata, Euteleostomi,
Mammalia, Eutheria, Cetartiodactyla, Suina, Suidae, Sus.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                     SEQUENCE FROM N.A.
MEDLINE=92175874; PubMed=1339404;
Peelman L.J., de Weghe A.R., Coppieters W.R., van Zeveren A.J.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Query Match 97.3%; Score 1279; DB 1; Length 641; Best Local Similarity 97.3%; Pred. No. 5.7e-71; Matches 251; Conservative 2; Mismatches 5; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           TIGRFAMS; TIGKULDZA, ......,
PROSITE; PS00229; HSP70_2; 1.
PROSITE; PS01036; HSP70_2; 1.
PROSITE; PS01036; HSP70_3; 1.
ATP-binding; Chaperone; Heat shock; Multigene family.
                                                                                                                                                                                       01-FEB-1994 (Rel. 28, Created)
01-FEB-1994 (Rel. 28, Last sequence update)
02-UJL-2004 (Rel. 44, Last annotation update)
Heat shock 70 kDa protein 1 (HSP70.1).
                                                                                                                                      641 AA
                                                                                                                                      PRT;
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PIR; S35718; S35718.
HSSP; P08107; 11HJO:
InterPro; IPR001023; H8P70.
Pfam; PF00012; HSP70; 1.
621 AQGPKGGSGSGPTIEEVD 638
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            PRINTS; PRO0301; HEATSHOCK70.
ProDom; PD000089; HBp70; 1.
TIGRFAMS; TIGR01991; HSCA; 1.
                                                                                                                                    STANDARD;
                                                                                                                                                                                                                                                                                                    Name=HSPA1;
Sus scrofa (Pig)
                                                                                                                                                                                                                                                                                                                                                                                                                 NCBI_TaxID=9823;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Bouquet Y.H.;
                                                                                                                                    HS71 PIG
P34930;
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                                                                             RESULT 9

H871_P1G

H871_P1G

OL-P1G

DT 01-F

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RESULT 12
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Rattus norvegicus (Rat).
Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
Mammalia; Eutheria; Rodentia; Sciurognathi; Muridae; Murinae; Rattus.
                                                                                                                                                                              TISSUE=Brain;
MEDLINE=94096443; PubMed=8271311;
Longo F.M., Wang S., Narasimhan P., Zhang J.S., Chen J., Massa S.M.,
                                                                                                                                                                                                                                                              "cDNA cloning and expression of stress-inducible rat hsp70 in normal and injured rat brain.";
                                                                                                                                                                                                                                                                                                                                                                        STRAIN=LEW 1W/GIN;
MEDLINE=95012453; PubMed=7927536;
Walter L., Rauh F., Guenther E.;
"Comparative analysis of the three major histocompatibility complex-linked heat shock protein 70 (Hsp70) genes of the rat.";
Immunogenetics 40:325-330(1994).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          STRAIN-Sprague Dawley, TISSUE-Liver;
MEDLINE-94368974, bubmed=8086479; DOI=10.1016/0167-4781(94)90247-X;
Lisowska K., Krawczyk Z., Krawczyk Z., Krawczyk Z., Golniczek P., Wisniewski J.;
"Cloning, nucleotide sequence and expression of rat heat inducible "Cloning, nucleotide sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                95.7%; Score 1258; DB 1; Length 641; 95.3%; Pred. No. 1.1e-69; ive 7; Mismatches 5; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            PIRST, 154542.

PIRST, 154542.

HSSP, P08107; 1H40.

INTEXPRO! 1PR010103; HSP70.

PRINTS; PR00301; HBATSHOCK70.

ProDom: P0000089; HSP70.

TIGRRAMS; TGR01991; HSCA; 1.

PROSITE; PS00297; HSP70.

PROSITE; PS003297; HSP70.

PROSITE; PS003297; HSP70.

PROSITE; PS003297; HSP70.

ATP-binding; Chaperone; Heat shock; Multigene family.
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D -> H (in Ref. 2 and 3).
G -> A (in Ref. 3).
; D02D96751C868583 CRC64;
                                                                                                                                                                                                                                                                                                             Neurosci. Res. 36:325-335(1993)
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Query Match 95.7
Best Local Similarity 95.3
Matches 246; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  408
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            SEQUENCE FROM N.A.
                                                                                                                                                        SEQUENCE FROM N.A.
                                                                                                     NCBI_TaxID=10116;
                                                                                                                                                                                                                                                                                                                                                            SEQUENCE FROM N.A
                       Name=Hsp70-2;
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Subjusher, FRUN, A.3.

XIRANI=wister, TISSUB=Spleen;

XIRANI=wister, TISSUB=Spleen;

XIRANI=wister, TISSUB=Spleen;

XIRANIE-94190258; PubMed=8141767;

XIRANIE-94190258; PubMed=8141767;

XIRANIE C. TISOLATION of a novel inducible rat heat shock protein (HSP70) gene and its expression during ischaemia/hypoxia and heat shock.";

XIRANIER, TYSSS7; CAA53140.1;

XIRANIER, X75357; CAA53140.1;

XIRANIER, X75357; CAA53140.1;

XIRANIER, TYSSS7; CAA53140.1;

XIRANIER, TYSSSY; CAA53140.1;

XIRANIER, PROSOSSY; Protein folding; IEA.

XIRANIER, PROSOSSY; Protein folding; IEA.

XIRANIER, PROSOSSY; HSP70.1.

XIRANIER, PROSOSSY; HSP70.1.

XIRANIER, PROSOSSY; HSP70.1.

XIRANIER, PROSOSSY; HSP70.2;

XIRANIER, PROSOSSY; HSP70.2;

XIRANIER, PROSITE, PROSOSSY; HSP70.2;

XIRANIER, PROSOSSY;

XIRANI
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                                       121 TNDKGRLSKEEIERWVQEAEKYKAEDEVQRERVSAKNALESYAFNMKSAVEDEGLKGKIS
                                                                                                                                                                                                                                                                                                                                                                                                        BADKKKVLDKCQEVISWLDANTLABKDEFEHKRKELEQVCNPIISGLYQGAGGPGPGFG
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KSENVQDLLLLDVAPLSLGLETAGGVMTALIKRNSTIPTKQTQIFTTYSDNQPGVLIQVY
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Mammalia; Eutheria; Rodentia; Sciurognathi; Muridae; Murinae; Rattus.
NCBI_TaxID=10116;
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Last annotation update)
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Matches 246; Conservative
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01-NOV-1996 (TrEMBLrel.
01-MAR-2004 (TrEMBLrel.
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Campbell R.D., Hood L.;
"Analysis of the gene-dense major histocompatibility complex class III
                                564 RADKKKVLDKCQEVISWLDSNTLAEKEEFVHKREELERVCNPIISGLYQGAGAGGFG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   384 KSENVQDLLLLDVAPLSLGLETAGGVMTALIKRNSTIPTKQTQTFTTYSDNQPGVLIQVY
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TNDKGRLSKEEIERMVQEAERYKAEDEVQRERVAAKNALESYAFNMKSAVEDEGLKGKIS
                     EADKKKVLDKCQEVISWLDANTLAEKDEFEHKRKELEQVCNPIISGLYQGAGGPGPGFG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      1 KSENVQDLLLLDVAPLSLGLETAGGVMTALIKRNSTIPTKQTQIFTTYSDNQPGVLIQVY
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              EGERAMTRDNNLLGRFELSGIPPAPRGVPQIEVTFDIDANGILNVTATDKSTGKANKITI
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                                                                                                                                                                                                                            Bukaryota, Metazoa, Chordata, Craniata, Vertebrata, Euteleostomi,
Mammalia, Butheria, Rodentia, Sciurognathi, Muridae, Murinae, Mus.
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           94.3%; Score 1239; DB 2; Length 641; 93.4%; Pred. No. 1.7e-68; ive 11; Mismatches 6; Indels
                                                                                                                                                                                                                                                                                                                                       region and its comparison to mouse.";
genome Res. 13:2621-2636(2003).
-!- SMILARITY: Belongs to the heat shock protein 70 family.
EMBL; AF109906; AAC84169.1;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       641 AA; 70079 MW; F49C33E602EAE334 CRC64;
                                                                                                                                                                        Last sequence update)
Last annotation update)
                                                                                                                                           641 AA
                                                                                                                                                                                                                                                                                             PubMed=14656967; DOI=10.1101/gr.1736803;
                                                                                                                                                                                                                                                                                                                                                                                        MGD; MGI105975; H2-Bf.
GO; GO:0005524; F:ATP binding; IRA.
InterPro; IRR001023; H8P70.
Pfam; PR0012; H8P70; I.
PRINTS; PR00301; HBP70; I.
PROSITE; PS00297; HSP70_1.
PROSITE; PS00297; HSP70_2; I.
PROSITE; PS00329; HSP70_2; I.
                                                                                                                                                              Created)
                                                                                                                                          PRT;
                                                                               624 AQAPKGGSGSGPTIEEVD 641
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                                                               241 AQGPKGGSGSGPTIEEVD 258
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                                                                                                                                                           (TrEMBLrel. 13, C
(TrEMBLrel. 13, I
(TrEMBLrel. 26, I
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Best Local Similarity 93.4%;
Matches 241; Conservative 1
                                                                                                                                         PRELIMINARY;
                                                                                                                                                                                                                 Mus musculus (Mouse).
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                                                                                                                                                                                                                                                                        SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                 NCBI_TaxID=10090;
                                                                                                                                                                                01-MAR-2004
HSP70.
                                                                                                                                                  090WJS;
01-MAY-2000
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STRAIN-C57BL/6; TISSUE-Brain;

MEDLINE-22388257; PubMed=12477932; DOI=10.1073/pnas.242603899;

A Strausberg R.L., Feingold B.A., Grouse L.H., Derge J.G.,

A Liscull S.F., Zeeberg B., Buetow K.H., Schaefer C.F., Bhat N.K.,

A Lischul S.F., Zeeberg B., Buetow K.H., Schaefer C.F., Bhat N.K.,

A Diatchenco L., Marusina K., Farmer A.A., Rubin G.M., Hong L.,

B Diatcherco M., Soares M.B., Bonaldo M.F., Casavant T.L., Scheetz T.E.,

B Doads S.A., McEwan P.J., McKernan K.J., Malek J.A., Guarathe P.H.,

Richards S.A., McEwan P.J., McKernan K.J., Malek J.A., Guarathe P.H.,

Richards S., Worley K.C., Hale S., Garcia A.M., Gay L.J., Hulyk S.W.,

Villalon D.K., Muzny D.M., Sodergren B.J., Lu X., Gibbs R.A.,

Rabesley J., Helton E., Ketteman M., Madan A., Rodriques S., Sanchez A.,

Mhiting M., Madan A., Young A.C., Shevchenko Y., Bouffard G.G.,

Blakesley R.W., Touchman J.W., Green E.D., Dickson M.C.,

Rodriguez A.C., Grimwood J., Schmutz J., Myers R.M., Butterfield Y.S.,

A Dones S.J., Marra M.A.,

R Generation and initial analysis of more than 15,000 full-length human
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Mammalia; Butharia; Rodentia; Sciurognathi; Muridae; Murinae; Mus
NCBI_TaxID=10090;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Length 641;
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Submitted (JUL-2003) to the EMBL/GenBank/DDBJ databases
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                                                         Created)
Last sequence update)
Last annotation update)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Proc. Natl. Acad. Sci. U.S.A. 99:16899-16903 (2002)
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93.0%; Pred. No. 2.6e-68;
ive 12; Mismatches 6;
   641 AA
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GO; GO:0009408; P:response to heat; IMP.
GO; GO:0000723; P:telomere maintenance; IMP.
InterPro; IPR001023; Hsp70.
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ProDom; PD000089; Hsp70; 1.
PROSITE; PS00297; HSP70 1; 1.
PROSITE; PS01029; HSP70 2; 1.
PROSITE; PS01036; HSP70 3; 1.
ATP-binding; Heat shock
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             SEQUENCE FROM N.A.
STRAIN=C57BL/6; TISSUE=Brain;
                                                   01-0CT-2003 (TrEMBLrel. 25, 01-0CT-2003 (TrEMBLrel. 25, 01-MAR-2004 (TrEMBLrel. 26,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Best Local Similarity 93.0%
Matches 240; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             and mouse cDNA sequences.
PRELIMINARY;
                                                                                                                                                         Heat shock protein 1A.
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SEQUENCE FROM N.A.
                                                                                                                                                                                     Name=Hspala;
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         TISSUE-Liver;

MEDLINE-94357449; PubMed=8076831; DOI=10.1016/0378-1119(94)90305-0;

MEDLINE-94357449; PubMed=8076831; Moran L.A.;

METARY M.D., Aujame L., Shtang S., Moran L.A.;

"Structure and expression of an inducible HSP70-encoding gene from Mus
                                                                                                                                                                                                                                                                                                                                                                                              EADKKKVLDKCQEVISWLDANTLAEKDEFEHKRKELEQVCNPIISGLYQGAGGPGGFG
                                                                                                                                                                                                                          SEQUENCE FROM N.A. MEDLINE=90236310; PubMed=2332169; DOI=10.1016/0378-1119(90)90302-8; Hunt C., Calderwood S.; Echaron and sequence of a mouse hsp70 gene and its expression in mouse cell lines.";
                                                                                                                                                                                       Bukaryota, Metazoa, Chordata, Craniata, Vertebrata, Euteleostomi,
Mammalia, Butheria, Rodentia, Sciurognathi, Muridae, Murinae, Mus.
                                                                                                           HS71_MOUSE STANDARD; PRT; 642 AA.
P1787; 061689; 0255%;
01-M01990 (Rel. 13, Last sequence update)
29-MAR-2004 (Rel. 43, Last annotation update)
05-UTL-2004 (Rel. 44, Last annotation update)
Meat shock 70 kba protein 1 (HSP70.1) (HSP70-1/HSP70-2).
Mus musculus (Mouse)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       caspase activation; IDA.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             MGD; MGI:99517; Hsp70-1.
GO; GO:000119; P:inhibition of
InterPro; IPR001023; Hsp70.
Pfam; PF00012; HSP70: 1.
                                                       624 AQAPKGASGSGPTIEEVD 641
                                        241 AQGPKGGSGSGPTIEEVD 258
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     PR00301; HEATSHOCK70.
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TIGRFAMs; TIGR01991; HscA; 1.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      EMBL; M35021; AAA37864.1; -. EMBL; M76613; AAA57233.1; -.
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P08107; 1HJO.
                                                                                                                                                                                                                                                                                                                                                            Gene 146:273-278(1994)
                                                                                                                                                                                                                                                                                 Gene 87:199-204 (1990)
                                                                                                                                                                                                                                                                                                                                                                                 SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                     SEQUENCE FROM N.A.
                                                                                                                                                                                                             NCBI_TaxID=10090;
                                                                                                                                                                                                                                                                                                                                                                                           STRAIN=129;
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                                                                                                                                                                                                                                                                                                                                                      musculus.
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  -!- FUNCTION: In cooperation with other chaperones, Hsp70s stabilize pressistent proteins against aggregation and mediate the folding of newly translated polypeptides in the cytosol as well as within organelles. These chaperones participate in all these processes through their ability to recognize nonnative conformations of other proteins. They bind extended peptide segments with a net hydrophobic character exposed by polypeptides during translation and membrane translocation, or following stress-induced damage.
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                   384 KSENVQDLLLLDVAPLSLGLETAGGVMTALIKRNSTIPTKQTQTFTTYSDNQPGVLIQVY
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Lowe D.G., Moran L.A.;
"Molecular cloning and analysis of DNA complementary to three mouse
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
Mammalia; Eutheria; Rodentia; Sciurognathi; Muridae; Murinae; Mus
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                                                                                                                                                                                                                   DB 1; Length 642;
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01-NOV-1997 (Rel. 35, Created)
01-NOV-1997 (Rel. 35, Last sequence update)
05-UTL-2004 (Rel. 44, Last annotation update)
Heat shock protein 1A (Heat shock 70 kDa protein 3) (HSP70.3)
                                                                                                                                                                                                                                                                         Indels
PROSITE; PS00297; HSP70_1; 1.
PROSITE; PS00297; HSP70_2; 1.
ATP-binding; Chaperone; Heat shock; Multigene family.
CONFLICT 342 342 R -> A (in Ref. 2).
CONFLICT 628 628 Missing (in Ref. 2).
SEQUENCE 642 AA; 70176 MW; 4BB9B0B130C23DBB CRC64;
                                                                                                                                                                                                                                                                         9
                                                                                                                                                                                                                   Ouery Match
93.5%; Score 1228.5; DB 1
Best Local Similarity 93.1%; Pred. No. 7.6e-68;
Matches 241; Conservative 11; Mismatches 6;
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Mus musculus (Mouse).
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J. Biol. Chem. 261:2102-2112(1986).
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HS1A MOUSE
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          163 KSENVQDLLLLDVAPLSLGLETAGGVMTARHQANSTIPTKQTQTFTTYSDNQPGVLIQVY 222
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MEDINE=9831992; PubMed=9685725;
MEDINE=9831992; PubMed=9685725;
MEO Y., Ando A., Ando H., Ando J., Saijoh Y., Inoko H., Fujimoto H.;
"Genomic structure of the spermatid-specific HSP70 homolog gene
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
Mammalia; Eutheria; Primates; Catarrhini; Hominidae; Homo.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Milner C.M., Campbell R.D.; "Structure and expression of the three MHC-linked HSP70 genes."; Immunogenetics 32:242-251(1990).
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                                                                                                                                                                                                                                                                                                                                                                                                            92.5%; Score 1216; DB 1; Length 420; 91.9%; Pred. No. 2.7e-67; cive 12; Mismatches 9; Indels
                                                                                                                 188 188 V -> G.
420 AA; 46292 MW; 5DAIC6155C7B16B5 CRC64;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              SEQUENCE FROM N.A.
MEDLINE=91055806; Pubmed=1700760;
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HUMAN
HS7H HUMAN
AC P34931.
DT 28-FEB.
DT 28-FEB.
DT 05-JUL.
DR Heat 8]
DR Name-HI
OS HOMO 81
OC Mammal 1
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RN 11]
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Shina S., Tamiya G., Oka A., Inoko H.;
"Homo sapiens 2,229,817bp genomic DNA of 6p21.3 HLA class I region.";
Submitted (SEP-1999) to the EMBL/GenBank/DDBJ databases.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          1 KSENVQDLLLLDVAPLSLGLETAGGVMTALIKRNSTIPTKQTQIFTTYSDNQPGVLIQVY
                                                                                                                   SEQUENCE FROM N.A.
Rowen L., Qin S., Madan A., Dickhoff R., Dors M., Madan A., Hicks P.,
Loretz C., Ratcliffe A., Abbasi N., Shaffer T., Hood L.,
"Sequence of the human major histocompatibility complex class III
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Gaps
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   region of the major histocompatibility
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Milner C.M., Campbell R.D.; "Polymorphic analysis of the three MHC-linked HSP70 genes."; Immunogenetics 36:357-362(1992).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     -!- INDUCTION: Not induced by heat shock.
-!- SIMILARITY: Belongs to the heat shock protein 70 family.
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1.9e-60;
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                                                                                                                                                                                                                                                                    Submitted (MAR-1999) to the EMBL/GenBank/DDBJ databases
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/FIId=VAR 003820.

408 A.-> V (in Ref. 1).

424 T.-> P (in Ref. 1).

424 T.-> P (in Ref. 1).

70375 MW; A9339D7657166FF7 CRC64;
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InterPro; IPR001023; Hsp70.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   PRINTS; PRO0301; HEATSHOCK70.
ProDom; PD000089; Hep70; 1.
TIGRPAMs; TIGR01991; HscA; 1.
PROSITE; PS00297; HSP70_1; 1.
PROSITE; PS01026; HSP70_2; 1.
PROSITE; PS01036; HSP70_3; 1.
ATP-binding; Multigene Family; Polymorphism.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       84.4%; Score 1109; DI
82.6%; Pred. No. 1.9e.
:ive 16; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        MEDLINE~92406261; PubMed=1356099;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        EMBL, M59829; AAA63228.1; -.
EMBL, D85730; BAA32521.1; -.
EMBL, AF134726; AAD21817.1; -.
EMBL, AP000503; BAB63301.1; -.
PIR, B45871; B45871.
located in the class III regicomplex of mouse and man.";
J. Biochem. 124:347-353(1998)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Genew, HGNC:5234; HSPAIL.
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Matches 219; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Pfam; PF00012; HSP70; 1
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   HSSP; P08107; 1HJO
                                                                                                                                                                                                                                                                                                                                                                                                                                                                             VARIANT MET-493
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           CONFLICT
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                                                                                                                                                                                                                                         region."
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         SOTITION OF BURNESS AND SERVICE SOCIAL SERVICES SERVICES SOCIAL SERVICES SOCIA
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240
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     504 TNDKGRLSKEDIERMVQEAEKYKSEDDVQREKVSAKNGLESYAFNMKSTVEDEKLAGKIS 563
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               181 EADKKKVLDKCQEVISWLDANTLAEKDEFEHKRKELEQVCNPIISGLYQGAGG-PG---- 235
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            564 EEDKOKILDKCNEVISWLDKAQTAEKEEFEHQOKELEKVCNPIITKLYQSAGGMPGGMPE 623
EADKKKVLDKCQEVISWLDANTLAEKDEFEHKRKELEQVCNPI1SGLYQGAGGPGGFG
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                                                                                                                                                                                                                                      Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
Actinopterygii; Neopterygii; Teleostei; Ostariophysi; Cypriniformes;
Cyprinidae; Pimephales.
NCBI_TaxID=90988;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Length 650;
                                                                                                                                                                                                                                                                                                                          Lynn S.G., Scholik A.R., Yan H.Y., Shepherd B.S.; Submitted (FEB-2004) to the EMBL/GenBank/DDBJ databases.
-- SIMILARITY: Belongs to the heat shock protein 70 family. EMBL, AVS3877; AS446619.1; --
HSSP; P19120; 1ATR.
GO; GO:0005524; F.ATP binding; IEA.
GO; GO:0006527; P:protein folding; IEA.
GO; GO:0006986; P:response to unfolded protein; IEA.
InterPro; IRR011023; Hsp70.
              566 ESDKOKILDKCNELLSWLEVNOLAEKDEFDHKRKELEOMCNPIITKLYOG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  20; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 71316 MW; 60D538BA36A2EEF4 CRC64;
                                                                                                                                                            05-UUL-2004 (TrEMBLrel. 27, Created)
05-UUL-2004 (TrEMBLrel. 27, Last sequence update)
05-JUL-2004 (TrEMBLrel. 27, Last annotation update)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            DB 2;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        84.4%; Score 1108.5; DE
82.8%; Pred. No. 2e-60;
ive 17; Mismatches 2
                                                                                                                                        650 AA
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                                                 241 AQGPKGGSG-----SGPTIEEVD 258
                                                                || |:| :||||||||
617 CTGPACGTGYVPGRPATGPTIEEVD 641
                                                                                                                                                                                                    Heat shock cognate 70 kDa protein.
                                                                                                                                                                                                                                                                                                                                                                                                                                          Pfam, PP00012; HSP70; 1.
PRINTS; PR00301; HBP70; 1.
PRODOM; PD000089; HSP70; 1.
PROSITE; PS00297; HSP70_1; 1.
PROSITE; PS01329; HSP70_2; 1.
ATP-binding; Heat shock.
SEQUENCE 650 AA; 71316 MW;
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                                                                                                                                     PRELIMINARY;
                                                                                                                                                                                                                             Pimephales promelas.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Similarity
                                                                                                                                                                                                                                                                                                     SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                  rissum=Liver;
                                                                                                                                                  Q6QIS4;
05-JUL-2004
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Matches
                                                                                                              RESULT 18
Q6QIS4
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649 AA

PRT;

PRELIMINARY;

Q804B6 Q804B6;

RESULT 19 Q804B6 ID Q804B AC Q804B

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443
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               384 KSENVQDLLLLDVTPLSLGIETAGGVMTVLIKRNTTIPTKQTQTFTTYSDNQPGVLIQVY
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      1 KSENVQDLLLLDVAPLSIGLETAGGVMTALIKRNSTIPTKQTQIPTTYSDNQPGVLIQVY
                                                                                                          Eukaryota; Metazoa; Chordata, Craniata; Vertebrata; Euteleostomi;
Actinoperygii; Neopterygii; Teleostei; Ostariophysi; Cypriniformes;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        TISSUE=Embryo;
MEDLINE=22388257; PubMed=12477932; DOI=10.1073/pnas.242603899;
Strausberg R.L., Feingold B.A., Grouse L.H., Derge J.G.,
Klausner R.D., Collins F.S., Wagner L., Shenmen C.M., Schuler G.D.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             MGCS1952 protein.
Xenopus laevis (African clawed frog).
Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
Amphibia; Batrachia; Anura; Mesobatrachia; Pipoidea; Pipidae;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Length 649;
                                                                                                                                                                                                 [1] SEQUENCE FROM N.A. SEQUENCE FROM N.A. Shi Y., Gui J., Liu J., Xia J.; Submitted (DEC-2002) to the EMBL/GenBank/DDBJ databases. -!- SIMILARITY: Belongs to the heat shock protein 70 family. EMBL, AV195744; AAO43731.1; -- HSSP; P19120; 1ATR.
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                                                                                                                                                                                                                                                                                                                                                GO; GO: 0005524; F: MrP binding; IEA.
GO; GO: 0005524; F: MrP binding; IEA.
GO; GO: 0006487; P: response to unfolded protein; IEA.
GO; GO: 0006986; P: response to unfolded protein; IEA.
InterPro; IPR001023; Hsp70;
PRINTS; PR00301; Hsp70; 1.
PROSITE; PS00297; Hsp70; 1.
PROSITE; PS00229; Hsp70; 1.
PROSITE; PS00329; Hsp70 1; 1.
PROSITE; PS01035; Hsp70 2; 1.
PROSITE; PS01035; Hsp70 3; 1.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     71258 MW; 0DA48D5B5A28DF5D CRC64;
01-JUN-2003 (TrEMBLrel. 24, Created)
01-JUN-2003 (TrEMBLrel. 24, Last sequence update)
01-MAR-2004 (TrEMBLrel. 26, Last annotation update)
Heat shock cognate 70 kDa protein.
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Last annotation update)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            84.3%; Score 1108; DB 2;
82.3%; Pred. No. 2.2e-60;
iive 18; Mismatches 21;
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01-JUN-2003 (TrEMBLrel. 24, Last seq
01-MAR-2004 (TrEMBLrel. 26, Last ann
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Query Match
Best Local Similarity 82.3%,
Matches 219; Conservative
                                                                                       Carassius auratus gibelio.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     PRELIMINARY;
                                                                                                                                              Cyprinidae; Carassius
NCBI_TaxID=101364;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     649 AA;
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SEQUENCE FROM N.A.
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649 AA

STANDARD;

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                        SOW BRAND BR
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Altschul S.F., Zeeberg B., Buetow K.H., Schaefer C.F., Bhat N.K.,
Hopkins R.F., Jordan H., Moore T., Max S.I., Wang J., Hsieh F.,
Diatchenko. L., Marusina K., Farmer A.A., Rubin G.M., Hong L.,
Stapleton M., Soares M.B., Bonaldo M.F., Casavant T.L., Scheetz T.B.,
Brownstein M.J., Usdin T.B., Toshiyuki S., Carninci P., Prange C.,
Raha S.S., Loquellano N.A., Peters G.J., Abramson R.D., Mullahy S.J.,
Bosak S.A., McEwan P.J., McKernan K.J., Malek J.A., Gunaratne P.H.,
Richards S., Worley K.C., Hale S., Garcia A.M., Gay L.J., Hulyk S.W.,
Vilalon D.K., Muzny D.M., Sodergren B.J., Lu X., Gibbs R.A., Halvon B., Ketreman M., Madan A., Young A.C., Shevchenko Y., Bouffard G.G.,
Whiting M., Madan A., Young A.C., Shevchenko Y., Bouffard G.G.,
Blakesley R.W., Touchman J.W., Green B.D., Dickson M.C.,
Blakesley R.W., Touchman J.W., Green B.D., Dickson M.C.,
Rodriguez A.C., Grimwood J., Schmutz J., Myers R.M., Butterfield Y.S.,
Jones S.J., Marra M.A.,
Jones S.J., Marra M.A.,
T., "Generation and initial analysis of more than 15,000 full-length human
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            "Genetic and genomic tools for Xenopus research: The NIH Xenopus
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Klein S., Strausberg R.;

L Submitted (JAN-2003) to the EMBL/GenBank/DDBJ databases.

L Submitted (JAN-2003) to the heat shock protein 70 family.

R BMBL; BC046262; AAH46262.1;

R HSSP; P19120; JATR.

R GO; GO:0005224; F:ATP binding; IRA.

R InterPro; IPR001023; Hsp70.

R RINTS; PR000121; HSP70; 1.

DR PRIDEM; P2000309; Hsp70; 1.

DR PROSITE; P800329; HSP70. 1;

DR PROSITE; P800329; HSP70. 1;

DR PROSITE; P80136; HSP70. 1;

DR PROSITE; P80136; HSP70. 2;

DR PROSITE; P801036; HSP70. 3;

DR PROSITE; P801036; HSP70. 3;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            TISSUE=Embryo;
MEDLINE=22341132; PubMed=12454917; DOI=10.1002/dvdy.10174;
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Dev. Dyn. 225:384-391(2002)
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ATP-binding.
SEQUENCE 6
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     61
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RESULT 21 HS7C_BRARE

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This SWISS-PROT entry is copyright. It is produced through a collaboration between the Swiss Institute of Bioinformatics and the EMBL outstation the Buropean Bioinformatics Institute. There are no restrictions on its use by non-profit institutions as long as its content is in no way modified and this statement is not removed. Usage by and for commercial entities requires a license agreement (see http://www.isb-sib.ch/announce/or send an email to license@isb-sib.ch).
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  61 EGERAMTKDNNLLGRFELSGIPPAPRGVPQIEVTFDIDANGILNVTATDKSTGKANKITI
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 121 TNDKGRLSKEEIERMVQEAEKYKAEDEVQRERVSAKNALESYAFNMKSAVEDEGLKGKIS
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                                                                                                                                                               Eukaryota, Metazoa, Chordata, Craniata, Vertebrata, Euteleostomi,
Actinopterygii, Neopterygii, Teleostei, Ostariophysi, Cypriniformes,
Cyprinidae, Danio.
NCBI_TaxID=7955,
                                                                                                                                                                                                                                                                                                                                  MEDINE=97348566; PubMed=9204550; Graser R.T., Malnar-Dragojevic D., Vincek V.; Cloning and characterization of a 70 kd heat shock cognate (hsc70) gene from the zebrafish (Danio rerio)."; Genetica 98:273-276(1996).
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Pfam; PP00012; Hsp70.
PRINTS; PR00301; Hsp70, 1.
PRODOM; PD000089; Hsp70, 1.
PTGREPAMs; TIGR01991; HscA; 1.
PROSITE; PS000297; HSP70 1; 1.
PROSITE; PS000329; HSP70 2; 1.
PROSITE; PS01036; HSP70 3; 1.
SEQUENCE 649 AA; 70974 MW; D48GBB5CA6E8938C CRC64;
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81.6%; Pred. No. 5.9e-60;
ive 19; Mismatches 22;
01-NOV-1997 (Rel. 35, Created)
01-NOV-1997 (Rel. 35, Last sequence update)
01-NOV-1997 (Rel. 34, Last annotation update)
Heat shock cognate 71 kDa protein.
                                                                                                                                        Brachydanio rerio (Zebrafish) (Danio rerio).
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InterPro; IPR001023; Hsp70.
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HSSP; P08109; ICKR.
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Matches 217; Conservative
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                                                                                                                                                                                                                                                                                                           SEQUENCE FROM N.A.
                                                                                                           Name=hsc70;
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Cricetulus.
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P19378;
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                                                                                                                REQUENCE FROM N.A.

REQUENCE FROM N.A.

REDINE=22388257; PubMed=12477932; DOI=10.1073/pnas.242603899;

REDINE=22388257; PubMed=12477932; DOI=10.1073/pnas.242603899;

RA Strausberg R.L., Feingold E.A., Grouse L.H., Derge J.G.,

RA Altachul S.F., Zeeberg B., Buetow K.H., Schaefer C.F., Bhat N.K.,

RA Altachul S.F., Jordan H., Moore T., Max S.I., Wang J., Haieh F.,

Diatchenko L., Marusina K., Farmer A.A., Rubin G.M., Hong L.,

Diatchenko L., Marusina K., Farmer A.A., Rubin G.M., Hong L.,

RA Stapleton M., Soares M.B., Bonaldo M.F., Casavant T.L., Scheetz T.E.,

RA Brownstein M.J., Usdin T.B., Toshiyuki S., Carninoi P., Prange C.,,

RA Bosak S.A., McZwan P.J., McKernan K.J., Malek J.A., Gunaratne P.H.,

RA Richards S., Worley K.C., Hale S., Garcia A.M., Gay L.J., Hulyk S.W.,

RA Richards S., Worley K.C., Hale S., Garcia A., Rodrigues S., Sanchez A.,

Rabey J., Helton E., Retreman M., Madan A., Rodrigues S., Sanchez A.,

RA Whiting M., Madan A., Young A.C., Shevchenko Y., Bouffard G.G.,

RA Richards W., Touchman J.W., Green E.D., Dickson M.C.,

Ra Blackeley R.W., Touchman J.W., Green E.D., Dickson M.C.,

RA Nodriguez A.C., Grimwood J., Schmutz J., Myers R.M., Butterfield Y.S.,

RA Jones S.J., Marra M.A.,

RA Jones S.J., Marra M.A.,

RA Generation and initial analysis of more than 15,000 full-length human

RT and mouse CDNA sequences.",

R. Proc. Natl. Acad. Sci. U.S.A., 99:16899-16903(2002).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       3;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Gaps
                                                       Bukaryota; Metazoa; Chordata; Craniata; Vertebrata; Buteleostomi;
Actinopterygii; Neopterygii; Teleostel; Ostariophysi; Cypriniformes;
Cyprinidae; Danio.
NCBI_TaxIb=7955;
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Submitted (FEB-2004) to the EMBL/GenBank/DDBJ databases.
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Last sequence update)
Last annotation update)
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81.6%; Pred. No. 5.9e-60;
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                                                 Brachydanio rerio (Zebrafish) (Danio rerio).
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GO; GO:0005524; F:ATP binding; IEA.
InterPro; IRR001023; Hsp70.
Pfam; PF00012; HSP70; 1.
PRINTS; PR00301; HEATSHOCK70.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ProDom; PD000089; Hsp70; 1.
PROSITE, PS00397; HSP70_1; 1.
PROSITE; PS00329; HSP70_2; 1.
PROSITE; PS01036; HSP70_3; 1.
  27,
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Best Local Similarity 81.69
Matches 217; Conservative
  (TrEMBLrel. (TrEMBLrel.
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                           Hspa8 protein.
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  05-JUL-2004
25-OCT-2004
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This SWISS-PROT entry is copyright. It is produced through a collaboration between the Swiss Institute of Bioinformatics and the EMBL outstation the European Bioinformatics Institute. There are no restrictions on its use by non-profit institutions as long as its content is in no way modified and this statement is not removed. Usage by and for commercial entities requires a license agreement (See http://www.isb-sib.ch/announce/or send an email to license@isb-sib.ch).
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PROSITE; PS00297; HSP70_2; 1.
PROSITE; PS01036; HSP70_3; 1.
ATP-binding; Chaperone; Hear shock; Multigene family; Nuclear protein. SEQUENCE 646 AA; 70805 MM; PC65A2DC5095ADIC CRC64;
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504 TNDKGRLSKEDIBRMVQEAEKYKAEDDVQRDKVSAKNGLESYAFNMKSTVEDEKLKGKIS
                                                                         181 BADKKKVLDKCQEVISWLDANTLAEKDEPEHKRKELEQVCNPIISGLYQGAGG-PG-
                                                                                                                                                                                                                                                                                                                                                               01-NOV-1990 (Rel. 16, Last sequence update)
25-OCT-2004 (Rel. 45, Last annotation update)
Heat shock cognate 71 kDa protein.
Name-HSSPA8; Synonyms-HSC70;
Cricetulus griseus (Chinese hamster).
Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
Mammalia; Eutheria; Rodentia; Sciurognathi; Muridae; Cricetinae;
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                                                                                                                                                                                                                                                                                                      646 AA
                                                                                                                                                                     624 GMPGGFPGAGAAPGGGSSGPTIEEVD 649
                                                                                                                                             236 -- PGGF-GAQGPKGGSGSGPTIEEVD 258
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InterPro; IPR001023; Hsp70.
Pfam; PP00012; HSP70; 1.
PRINTS; PR00301; HRATSHCK70.
ProDom; PD000089; Hsp70; 1.
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81.7%;
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Matches 215; Conservative
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SEQUENCE FROM N.A.

MAGININE_2536463; PubMed=1246685; DOI=10.1038/nature01266;

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NEAZAK, Y. Furunc M., Kasukawa T., Adachi J., Bono H., Kondo S.,

Nikaido I., Osato N., Saito R., Suzuki H., Yamanaka I., Kiyosawa H.,

RA

Nikaido I., Osato N., Saito R., Suzuki H., Yamanaka I., Kiyosawa H.,

RA

Radarelli R., Hill D.P., Bult C., Hume D.A., Quackenbush J.,

Baldarelli R., Hill D.P., Bult C., Hume D.A., Quackenbush J.,

Baldarelli R., Dragani T.A., Pletcher C., Corbani L.E., Cousins S.,

Balake J.A., Bradt D., Brusic V., Chothia C., Corbani L.E., Cousins S.,

Dalla E., Dragani T.A., Pletcher C.P., Forrest A., Prazer K.S.,

Asasterland T., Gariboldi M., Gissi C., Godzik A., Gough J.,

Grimmond S., Gustincich S., Hirokawa N., Jackson I.J., Jarvis E.D.,

Kanai A., Kawaji H., Kawasawa Y., Kedziereki R.M., King B.L.,

Konagaya A., Kurochkin I.V., Lee Y., Lenhard B., Lyons P.A.,

Maglott D.R., Maltais L., Marchionni L., McKenzie L., Miki H.,

Maglott D.R., Maltais L., Marchionni L., McKenzie L., Miki H.,

Ravasi T., Reed J.C., Reed D.J., Reid J., Ring B.Z., Ringwald M.,

Sandelin A., Schneider C., Semple C.A., Setou M., Shimada K.,

Sultana R., Takenaka Y., Taylor M.S., Teasdale R.D., Tomita M.,

Numing L.G., Wynshaw-Boris A., Yanagisawa M., Yang I., Yang I.,

Yuan Z., Zavolan M., Zhu Y., Zimmer A., Carninci P., Haystsu N.,

Numing L.G., Wynshaw-Boris A., Yanagisawa T., Fukuda S.,

Hirozane-Kishikawa T., Konno H., Nakamura M., Sakazume N.,

Shiraki T., Waki K., Kawai J., Aizawa K., Arakawa T., Fukuda S.,

Hara A., Hashizume W., Imotani K., Ishii Y., Itoh M., Kagawa I.,
                                         623
                                                                                                                                                TNDKGRLSKEEIERMVQEAEKYKAEDEVQRERVSAKNALESYAFNMKSAVEDEGLKGKIS
                                                                                                                   EADKKKVLDKCQEVISWLDANTLAEKDEFEHKRKELEQVCNPIISGLYQGAGG-PG--PG
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MEDLINE=88055872; PubMed=3334718;
Glebel L.B., Dworniczak B.P., Bautz E.K.F.;
Glebel L. B., Equlation of a constitutively expressed mouse mRNA encoding a 72-kDa heat shock-like protein.";
Dev. Biol. 125:200-207(1988).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Buteleostomi;
Mammalia; Butheria; Rodentia; Sciurognathi; Muridae; Murinae; Mus.
NCBI_TaxID=10090;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          MEDLINE=99196705; PubMed=10095055;
Hunt C.R., Parsian A.J., Goswami P.C., Kozak C.A.;
"Characterization and expression of the mouse Hsc70 gene.";
Biochim. Biophys. Acta 1444:315-325(1999).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           SEQUENCE FROM N.A. STAIN-1919; TRAIN-1919; TISSUE-Mammary gland; Soulier S., Vilotte J.-L., L'Huillier P.J., Mercier J.-C.; Submitted (JUN-1995) to the EMBL/GenBank/DDBJ databases.
                                                                                                                                                                                                                                                                                                                                                                                          HS7C_MOUSE STANDARD; PRT; 646 AA. P63017; P08109; P12225; O62373; Q62374; Q62375; O1-AUG-1988 (Rel. 08, Created) 01-AUG-1988 (Rel. 08, Last sequence update) 25-OCT-2004 (Rel. 45, Last annotation update) Heat shock cognate 71 kDa protein.
                                                                                                                                                                                                                                               238 GF--GAQGPKGGSGSGPTIEEVD 258
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Name=Hspa8; Synonyms=Hsc70;
Mus musculus (Mouse)
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Mygazki A., Sakiki K., Sasaki D., Sasaki D., Sakasi D., Sakasi D., Shingawa A., Yasunidah A., Yoshinon M., Waterston R., Lander E. S., Rogers J., Ryasunidah A., Yoshinon M., Waterston R., Lander E. S., Rogers J., Ryasunidah A., Yoshinon M., Waterston R., Lander E. S., Rogers J. C., 710 fill-length consar in the control of the control of the mouse trianscriptome based on functional annotation of the 70 fill-length consar in the control of the control of the mouse trianscriptome based on functional annotation of the 70 fill-length consar in the control of t
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-!- SIMILARITY: Belongs to the heat shock protein 70 family.
INDUCTION: Constitutively synthesized
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Sorger P.K., Pelham H.R.B.;
"Cloning and expression of a gene encoding hsc73, the major hsp70-like
protein in unstressed rat cells.";
EMBO J. 6:993-998(1987).
                                                                                                                                                                                                                                                   TNDKGRLSKEDIERMYQEAEKYKAEDEKQRDKVSSKNSLESYAFNMKATVEDEKLQGKIN
Chaperone, Heat shock; Multigene family, Nuclear protein.
428 428 F -> L (in Ref. 2 and 3).
46 AA; 70871 WW; 03A27B30E6C076ED CRC64;
                                                                                                                                                     1 KSENVQDLLLLDVAPLSLGLETAGGVMTALIKRNSTIPTKQTQIFTTYSDNQPGVLIQVY
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P63018; P08109; P12225; Q62373; Q62374; Q62375;
D1-AQG-1988 (Rel. 08, Created)
01-AUG-1988 (Rel. 08, Last sequence update)
25-OCT-2004 (Rel. 45, Last annotation update)
Heat shock cognate 71 kDa protein.
Name-Happas; Synonyma=Hsc70, Hsc73;
Rattus norvegicus (Rat)
Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            MEDILINE-99303702; PubMed=10373374; DOI=10.1006/jmbi.1999.2776; MOSSHAUSET R.C., Hu W., Wang H., Pang Y., Flynn G.C.,
Mosshauser R.C., Hu W., Wang H., Pang Y., Flynn G.C.,
Mosshauser R.R.P.,
"High-resolution solution structure of the 18 kDa substrate-binding domain of the mammalian chaperone protein Hsc70.";
-I. Mol. Biol. 289:1387-1403(1999).
-I. FUNCTION: Chaperone.
-I. SUBCELLULAR LOCATION: Translocates rapidly from the cytoplasm to the nuclei, and especially to the nucleoli, upon heat shock (By similarity).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     MEDINE-86310827; PubMed=3939319;
O'Malley K., Mauron A., Barchas J.D., Kedes L.;
"Constitutively expressed rat mRNA encoding a 70-kilodalton heat-
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                                                                        DB 1; Length 646;
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NIH - Mammalian Gene Collection (MGC) project;
Submitted (NOV-2003) to the EMBL/GenBank/DDBJ databases.,
                                                                          83.8%; Score 1100.5; DB 1; Length ilarity 81.7%; Pred. No. 6.3e-60; Conservative 23; Mismatches 20; Indels
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                                                                                                Similarity
                                         646 AA;
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 ATP-binding;
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Best Local Simil
Matches 215; C
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TIGRPAMS; TIGR01991; HSCA; 1.
PROSITE; PS00297; HSP70_1; 1.
PROSITE; PS00329; HSP70_2; 1.
PROSITE; PS01036; HSP70_3; 1.
3D-structure; ATP-binding; Chaperone; Heat shock; Multigene family;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   5;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  DB 1; Length 646;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   20; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               70871 MW; 03A27B30E6C076ED CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             83.8%; Score 1100.5; DB 81.7%; Pred. No. 6.3e-60; ive 23; Mismatches 20
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         GF--GAQGPKGGSGSGPTIEEVD 258
                                                                                                                                                                                                                   EMBL; Y00054; CAA68265.1; -.
                                                                                                                                                                                                                                            EMBL; M11942; AAA41354.1; -. EMBL; BC061547; AAH61547.1; PIR; S07197; S07197.
                                                                                                                                                                                                                                                                                                                                                                           RGD; 621725; Hspa8.
InterPro; IPR001023; Hsp70.
                                                                                                                                                                                                                                                                                                                        1CKR; NMR; A=385-543.
7HSC; NMR; A=385-543.
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Acanthomorpha, Acanthopterygii; Percomorpha, Perciformes, Percoidei; Moronidae; Dicentrarchus.
NCBI_TaxID=13489;
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80.2%; Pred. No. 9.2e-60;
iive 21; Mismatches 22;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    236 --PGGF---GAQGPKGGSGSGPTIEEVD 258
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            GMPGGFPGAGGAAPGGGGSSGPTIEEID 653
                                                                                                                                                                                                                                                                                  GO; GO: 0005524; F:ATP binding; IEA.
InterPro; IPR001023; Hsp70.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     PRT;
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Pfam; PF00012; HSP70; 1.
PRINTS; PR00301; HEATSHOCK70.
ATP-binding; Hypothetical protein.
NON_TER
                                                                                                                                                                                                                                                                                                                                     Pfam; PF00012; HSP70; 1.
PRINTS; PR00301; HEATSHOCK70.
ProDom; PD000089; HSP70; 1.
PROSITE; PS00297; HSP70_1; 1.
PROSITE; PS01036; HSP70_2; 1.
PROSITE; PS01036; HSP70_3; 1.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     PRELIMINARY;
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Best Local Similarity
Matches 215; Conserv
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                                                                                                      SEQUENCE FROM N.A.
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            SEQUENCE
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Q96BE0
        SO WE WAY TO BE 
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       EGERAMIKDNNLLGRFELSGIPPAPRGVPQIEVIFDIDANGILNVTATDKSTGKANKITI 120
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          503
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        TNDKGRLSKEDIERMYQEAEKYKAEDEKQRDKVSSKONSLESYAFNMKATVEDEKLGGKIS 563
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                181 EADKKKVLDKCQEVISWLDANTLAEKDEPEHKRKELEQVCNPIISGLYQGAGG-PG--PG 237
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         564 DEDKQKILDKCNEIINWLDKNQTAEKEEFEHQQKELEKVCNPIITKLYQSAGGMPGGMPG 623
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  EGERAMTKDNNLLGKFELTGIPPAPRGVPQIEVTFDIDANGILNVSAVDKSTGKENKITI
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Bukaryota; Metazoa; Chordata; Craniata; Vertebrata; Buteleostomi;
Actinopterygii; Neopterygii; Teleostei; Buteleostei; Neoteleostei;
                                                                                                                                                                                                                                                                                                                                        Bukaryota; Metazoa; Chordata; Craniata; Vertebrata; Buteleostomi;
Archosauria; Aves; Neognathae; Galliformes; Numididae; Numida.
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          83.8%; Score 1100.5; DB 2; Length 646;
81.7%; Pred. No. 6.3e-60;
ive 23; Mismatches 20; Indels 5;
                                                                                                                                                                                                                                                                                                                                                                                                                                                      Iwamoto S., Hara H., Yoshida Y., Hanzawa K., Watanabe S.; Submitted (MAR-2004) to the EMBL/GenBank/DBJ databases.

-- SIMILARITY: Belongs to the heat shock protein 70 family. EMBL; AB167144; BAD12572.1; --
HSSP; P19120; 1ATR.
GO; GO:0005524; F:ATP binding; IEA.
GO; GO:0006945; P:Presponse to unfolded protein; IEA.
InterPro: IRRO1023; HSP70;
Pfam, PP00112; HSP70; 1.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          70870 MW; EDDD8CB1E52A6EFC CRC64;
                                                                                                                                                                                                            Last sequence update)
Last annotation update)
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Last annotation update)
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                                                                                                                                                                                                                                                                                                                Numida meleagris (Helmeted guineafowl).
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     624 GPPGGAPPSGGASSGPTIEEVD 646
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ProDom; PR0089; HB701.
PROSITE; PS00297; HSP70.1.1.
PROSITE; PS00329; HSP70.2; 1.
ATP-binding; Heat shock.
SEQUENCE 646 AA; 70870 MW;
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(TrEMBLrel. 27, I
                                                                                                                                                                              05-JUL-2004 (TrEMBLrel. 27, 05-JUL-2004 (TrEMBLrel. 27, 05-JUL-2004 (TrEMBLrel. 27,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Local Similarity 81.7
es 215; Conservative
                                                                                                                              PRELIMINARY;
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                                                                                                                                                                                                                                                                  Heat shock protein.
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HSP70.
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05-JUL-2004
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  386 KSENVQDLLLLDVTPLSLGIETAGGVMTVLIKRNTTIPTKQTQTFTTYSDNQPGVLIQVY
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   EGERAMIKDINILLGRFELSGIPPAPRGVPQIEVTFDIDANGILNVTATDKSTGKANKITI
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01-DEC-2001 (TrEMBLrel. 19, Created)
01-DEC-2001 (TrEMBLrel. 19, Last sequence update)
01-MAR-2004 (TrEMBLrel. 26, Last annotation update)
Hypothetical protein (Fragment).
Hypothetical protein (Fragment).
Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
Mammalia; Eutheria; Primates; Catarrhini; Hominidae; Homo.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           10;
Gornati R., Vigetti D., Saroglia M., Bernardini G.;
Submitted (DEC-2003) to the EMBL/GenBank/DDBJ databases.
-!- SIMILARITY: Belongs to the heat shock protein 70 family.
EMBL; AY423555; AAR01102.2; -.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Length 653;
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Strausberg R.;
Submitted (OCT-2001) to the EMBL/GenBank/DDBJ databases.
-!- SIMILARITY: Belongs to the heat shock protein 70 family.
EMBL; BC015699; AAH15699.1; -.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           22; Indels
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Pfam; PF00012; HSP70;
                                                 ATP-binding
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                                                            SEQUENCE
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                                                                                                                                     TNDKGRLSKEEIERMVQEAEKYKAEDEVQRERVSAKNALESYAFNMKSAVEDEGLKGKIS 180
                                                                                                                                                EADKKKVLDKCQEVISWLDANTLAEKDEFEHKRKELEQVCNPIISGLYQGAGG-PG--PG 237
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                                                            9
                                                                      KSENVQDLLLLDVTPLSLGIETAGGVMTVLIKRNTTIPTKQTQTFTTYSDNQPGVLIQVY
                                                           1 KSENVODLLLLDVAPLSLGLETAGGVMTALIKRNSTIPTKQTQIFTTYSDNQPGVLIQVY
                                                                                                EGERAMTKDNNLLGRFELSGI PPAPRGVPQI EVTFDI DANGI LNVTATDKSTGKANKI TI
                                        Gaps
                                                                                                                                                                                                                                                                                                                                                      Bukaryota, Metazoa, Chordata, Craniata, Vertebrata, Buteleostomi,
Mammalia, Eutheria, Primates, Catarrhini, Hominidae, Homo
                                        . 5;
                   Query Match 83.5%; Score 1097.5; DB 2; Length 269; Best Local Similarity 81.4%; Pred. No. 3.4e-60; Matches 214; Conservative 24; Mismatches 20; Indels', 5;
                                                                                                                                                                                                                                                                                                                                                                                                               MEDLINE=22388257; PubMed=12477932; DOI=10.1073/pnas.242603899;
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Submitted (MAY-2001) to the EMBL/GenBank/DDBJ databases.
--- SIMILARITY: Belongs to the heat shock protein 70 family.
--- BEMBL; BC007276.1; ---
HSSP; P19120; 3HSC.
GO; GO:0005524; F:ATP binding; IEA.
InterPro; IPR001023; Hsp70.
 29361 MW; 4435C53CF9385475 CRC64;
                                                                                                                                                                                                                                                                                                                 Last sequence update)
Last annotation update)
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                                                                                                                                                                                                                                                                                      586 AA
                                                                                                                                                                                                                              247 GFPGGGAPPSGGASSGPTIEEVD 269
                                                                                                                                                                                                                 GF -- GAQGPKGGSGSGPTIEEVD 258
                                                                                                                                                                                                                                                                                                        Created)
                                                                                                                                                                                                                                                                                      PRT;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    and mouse cDNA sequences.";
                                                                                                                                                                                                                                                                                     PRELIMINARY;
                                                                                                                                                                                                                                                                                                                                             Homo sapiens (Human)
269 AA;
                                                                                                                                                                                                                                                                                                                                                                                            SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                         NCBI_TaxID=9606;
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 SEQUENCE
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61 EGERAMTKONNLLGRFELSGIPPAPRGVPQIEVTFDIDANGILNVTATDKSTGKANKITI 120
                                                                                                                                                                                                                                                                                                                                                                  443
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                                                                                                                                                                                                                                                                                                                                                                                                                                   444 TNDKGRLSKEDIERNVQEAEKYKAEDEKQRDKVSSKNSLESYAFNMKATVEDEKLQGKIN 503
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                                                                                                                                                                                                                                                               504 DEDKOKILDKCNEIINWLDKNQTAEKEEFEHQOKELEKVCNPIITKLYQSAGGMPGGMPG 563
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                                                                                                                                                                                                                                                                                                                                                   384 EGERAMTKDNNLLGKPELTGIPPAPRGVPQIEVTFDIDANGILNVSAVDKSTGKENKTT
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Tsukahara F., Yoshioka T., Muraki T.;
"Molecular and functional characterization of HSC54, a novel variant
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               TISSUE=Placenta, and Skin;
MEDLINE=22388257; PubMed=12477932; DOI=10.1073/pnas.242603899;
Strausberg R.L., Feingold E.A., Grouse L.H., Derge J.G.,
Klausner R.D., Collins F.S., Wagner L., Shemmen C.M., Schuler G.D.,
Altschul S.F., Zeeberg B., Buetow K.H., Schaefer C.F., Bhat N.K.,
Hopkins R.F., Jordan H., Moore T., Max S.I., Wang J., Hsieh F.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
Mammalia; Eutheria; Primates; Catarrhini; Hominidae; Homo.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     SEQUENCE FROM N.A. (ISOFORM 1).
MEDLINE=87259994; PubMed=3037489;
Dworniczak B.P., Mirault M.-E.;
"Structure and expression of a human gene coding for a 71 kd heat
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در
                                                                                                                                                      DB 2; Length 586;
                                                                                                                                                                                              20; Indels
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                                                                                                            586 AA; 64602 MW; 8640B210CABE3475 CRC64;
                                                                                                                                                  83.5%; Score 1097.5; DB
81.4%; Pred. No. 8.7e-60;
ive 24; Mismatches 20
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                p11142; Q9H3R6;
01-JUL-1989 (Rel. 11, Created)
1-JUL-1998 (Rel. 11, Lest sequence update)
25-OCT-2004 (Rel. 45, Last annotation update)
Heat shock cognate 71 kDa protein.
Heme-HSPA9, Synonyms=HSC70, HSP73, HSPA10;
HOMO sapiens (Human).
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         of human heat shock cognate protein 70."; Mol. Pharmacol. 58:1257-1263(2000).
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PRINTS; PR00301; HEATSHOCK70.
ProDom; PD000089; HSp70; 1.
PROSITE; PS00329; HSP70_2; 1.
PROSITE; PS01036; HSP70_3; 1.
                                                                                                                                                                                            Matches 214; Conservative
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Best Local Similarity
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Diatchenko L., Marusina K., Farmer A.A., Rubin G.M., Hong L.,
Stapleton M., Soares M.B., Bonaldo M.F., Casavant T.L., Scheetz T.B.,
Brownstein M.J., Usdin T.B., Toehlyvis S., Carninci P., Prange C.,
A. Raha S.S., Loquellano N.A., Peters G.J., Abramson R.D., Mullahy S.J.,
Bosak S.A., McEwan P.J., McKernan K.J., Malek J.A., Gunaratne P.H.,
Richards S., Worley K.C., Hale S., Garcia A.M., Gay L.J., Hulyk S.W.,
A. Villalon D.K., Muzny D.W., Sodergren B.J., Lu K., Gibbs R.A.,
Pahey J., Helton E., Ketteman M., Madan A., Rodrigues S., Sanchez A.,
Whiting M., Madan A., Young A.C., Shevchenko Y., Bouffard G.G.,
A. Rodriguez A.C., Grimwood J., Schmutz J., Myers R.M.,
Butkerfield Y.S.N., Krzywinski M.I., Skalska U., Smallus D.E.,
Butterfield Y.S.N., Krzywinski M.I., Skalska U., Smallus D.E.,
C. Grimmon and initial analysis of more than 15,000 full-length human
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Hattori H., Liu Y.-C., Tohnai I., Ueda M., Kaneda T., Kobayashi T., Tanabe K., Ohtsuka K.;
Tanabe K., Ohtsuka K.;
"Intracellular localization and partial amino acid sequence of a stress-inducible 40-kBa protein in HeLa cells.";
Cell Struct. Punct. 17:77-86 (1992)
-!- FUNCTION: Chaperone. Isoform 2 may function as an endogenous inhibitory regulator of HSC70 by competing the cochaperones.
-!- SUBCELLULAR LOCATION: Translocates rapidly from the cytoplasm to the nuclei, and especially to the nucleoli, upon heat shock.
                                                                                                                                                                                                                                                                                                                                                                                                                                       SEQUENCE OF 50-55; 103-107 AND 580-596.
MEDLINE=93162043; PubMed=1286667;
Rasmussen H.H., van Damme J., Puype M., Gesser B., Celis J.E.,
Vandekerchove J.;
"Microsequences of 145 proteins recorded in the two-dimensional gel
protein database of normal human epidermal keratinocytes.";
Electrophoresis 13:960-969(1992).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                SEQUENCE OF 77-86; 221-236 AND 302-311.
MEDLINE=96311348; PubMed=8713105; DOI=10.1006/bbrc.1996.1082;
Egerton M., Moritz R.L., Druker B., Kelso A., Simpson R.J.;
"Identification of the 70kD heat shock cognate protein (Hsc70) and alpha-actinin-1 as novel phosphotyrosine-containing proteins in T
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                IsoId=Pill42-2; Sequence=VSP_002427;
TISSUE SPECIFICITY: Ubjquitous.
INDUCTION: Constitutively synthesized.
SIMILARITY: Belongs to the heat shock protein 70 family.
                                                                                                                                                                                                                                                                                                                                                                                           Proc. Natl. Acad. Sci. U.S.A. 99:16899-16903(2002)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Biochem. Biophys. Res. Commun. 224:666-674(1996).
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Name=2; Synonyms=HSC54;
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SWISS-2DPAGE; P11142; HUMAN.
Aarhus/Ghent-2DPAGE; 6504; IEF.
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EMBL, AF352832, AAK17898.1;
EMBL, BC016179, AAH1660.1;
EMBL, BC016660; AAH16660.1;
EMBL, BC019816; AAH19816.1;
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                                                                                                                                                                                                                                                                                                                                                                      mouse cDNA sequences.
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"Cloning and expression of two novel cDRAs for hsp-70-related intracellular vitamin D binding protesins.";

Submitted (APR-1999) to the EMBL/GenBank/DDBJ databases.

-!- FUNCTION: Chaperone. Isoform 2 may function as an endogenous inhibitory regulator of HSC70 by competing the cochaperones (By similarity).

-!- SUBCELULAR LOCATION: Translocates rapidly from the cytoplasm to the nuclei, and especially to the nucleoli, upon heat shock (By
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Saguinus oedipus (Cotton-top tamarin).
Bukaryota, Metazoa, Chordata, Craniata, Vertebrata, Buteleostomi,
Mammalia, Butheria, Primates, Platyrrhini, Callitrichidae, Saguinus.
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25-OCT-2004 (Rel. 45, Last sequence update)
25-OCT-2004 (Rel. 45, Last annotation update)
Heat shock cognate 71 kDa protein (Intracellular vitamin D binding
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  5.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         83.5%; Score 1097.5; DB 1; Length 646; 81.4%; Pred. No. 9.7e-60; cive 24; Mismatches 20; Indels 5;
                                                                                                                                                                                                                                                                                                                                                                                                PROSITE; PS01036; HSP70_3; 1.
Alternative splicing; ATP-binding; Chaperone;
Direct protein sequencing; Heat shock; Multigene family;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               /FTId=VSP_002427.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Missing (in isoform 2).
                                                                                                                           GO; GO:0005622; C:intracellular; NAS.
GO; GO:00442623; F:ATPase activity, coupled; NAS.
GO:0006457; P:protein folding; NAS.
InterPro; IPR001023; HSP70.
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ProDom; PD000089; Hsp70; 1.
TIGRFAMS; TIGR01991; HsCA; 1.
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PROSITE, PS00329; HSP70_2; 1.
PROSITE; PS01036; HSP70_3; 1.
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Name=HSPA8; Synonyms=IDBP1;
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                                              Genew, HGNC:5241; HSPAB
                                                                            H-InvDB; HIX0010213; -.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         616
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OGP; P11142; -.
PHCI-2DPAGE; P11142;
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SEQUENCE FROM N.A.
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                                                                                                           MIM; 600816;
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Q71U34;
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[1]
SEQUENCE FROM N.A.
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                                                                                                                          This SWISS-PROT entry is copyright. It is produced through a collaboration between the Swiss Institute of Bioinformatics and the EMBL outstation the European Bioinformatics Institute. There are no restrictions on its most by non-profit institutions as long as its content is in no way modified and this statement is not removed. Usage by and for commercial entities requires a license agreement (See http://www.isb-sib.ch/announce/or send an email to license@isb-sib.ch).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        384 KSENVQDLLLLDVTPLSLGIETAGGVMTVLIKRNTTIPTKQTQTPTTYSDNQPGVLIQVY 443
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         444 EGERAMTKDNNILGKFELTGIPPAPRGVPQIEVTFDIDANGILNVSAVDKSTGKENKITI 503
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              564 DEDKQKILDKCNEIINWLDKNQTAEKEEFEHQQKELEKVCNPIIIKLYQSAGGMPGGMPG 623
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      61 EGERAMTKUNNILGRFELSGIPPAPRGVPQIEVTFDIDANGIIAVTATDKSTGKANKITI 120
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           TNDKGRLSKEEIERMVQEAEKYKAEDEVQRERVSAKNALESYAFNMKSAVEDEGLKGKIS 180
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            EADKKKVLDKCQEVISWLDANTLAEKDEFEHKRKELEQVCNPIISGLYQGAGG-PG--PG 237
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        9
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     1 KSENVQDLLLLDVAPLSLGLETAGGVMTALIKRNSTIPTKQTQIFTTYSDNQPGVLIQVY
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Actinopterygii; Neopterygii; Teleostei; Ostariophysi; Cypriniformes;
Cyprinidae; Danio.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         83.5%; Score 1097.5; DB 1; Length 646; 81.4%; Pred. No. 9.7e-60; ive 24; Mismatches 20; Indels 5;
                           INDUCTION: Constitutively synthesized.
SIMILARITY: Belongs to the heat shock protein 70 family.
                                                                                                                                                                                                                                                                                                                                                                                                EMBL; AF142571; AAF66593.1; -.
InterPro; IPR001023; Hsp70.
Pfam; PF00012; Hsp70; 1.
PRINTS; PF00301; Hsp70; 1.
PROSTE; PS00297; Hsp70; 1.
PROSITE; PS00297; HSP70_1; 1.
PROSITE; PS01036; Hsp70_2; 1.
PROSITE; PS01036; Hsp70_2; 1.
ATP-binding; Chaperone; Multigene family; Nuclear protein.
SEQUENCE 646 AA; 70898 MW; 9AA27B210730670C CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Created)
Last sequence update)
Last annotation update)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Brachydanio rerio (Zebrafish) (Danio rerio).
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             GPPGGGAPPSGGASSGPTIEEVD 646
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     PRT;
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01-JUN-2003 (TrEMBLrel. 24,
01-MAR-2004 (TrEMBLrel. 26,
Hspa8 protein.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Local Similarity 81.4
nes 214; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     PRELIMINARY;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         NCBI_TaxID=7955
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Name=hBba8;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            181
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           121
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Query Match
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Matches
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384 KSENVQDLLLLDVTPLSLGIETAGGVMTVLIKRNTTIPTKQTQTFTTYSDNQPGVLIQVY 443
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        TNDKGRLSKEEIERMVOEAEKYKAEDEVQRERVSAKNALESYAFNMKSAVEDEGLKGKIS 180
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   181 EADKKKVLDKCQEVISWLDANTLAEKDEFEHKRKELEQVCNPIISGLYQGAGG-PG---- 235
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     9
Raha S.S., Loquellano N.A., Peters G.J., Abramson R.D., Mullahy S.J., Bosak S.A., McEwan P.J., McKernan K.J., Malek J.A., Gunaratne P.H., Richards S., Morley K.C., Hale S., Garcia A.M., Gay L.J., Hulyk S.W., Villalon D.K., Muzny D.M., Sodergren B.J., Lu X., Gibbs R.A., Fahey J., Helton E., Ketteman M., Madan A., Rodrigues S., Sanchez A., Whiting M., Madan A., Young A.C., Shevchenko Y., Bouffard G.G., Blakesley R.W., Touchman J.W., Green E.D., Dickson M.C., Rodriguez A.C., Grimwood J., Schmutz J., Myers R.M., Butterfield Y.S., Krzywinski M.I., Skalska U., Smailus D.E., Schnerch A., Schein J.E., "Generation and initial analysis of more than 15,000 full-length human and mouse cDNA sequences.";
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        1 KSENVODILLIDVAPLSLGLETAGGVMTALIKRNSTIPTKQTQIFTTYSDNQPGVLIQVY
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       8; Gaps
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Query Match 83.5%; Score 1097; DB 2; Length 649; Best Local Similarity 81.2%; Pred. No. 1e-59; Matches 216; Conservative 19; Mismatches 23; Indels 8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Submitted (JAN-2003) to the EMBL/GenBank/DDBJ databases.
-!- SIMILARITY: Belongs to the heat shock protein 70 family.
EMBL; BC045841; AAH45841.1; -.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            649 AA; 71198 MW; 9C006B747724919B CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                            Proc. Natl. Acad. Sci. U.S.A. 99:16899-16903(2002).
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Last sequence update)
Last annotation update)
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     GMPGGFPGAGAAPGGGSSGPTIEEVD 649
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     HSSP; P19120; IATR.
ZFIN; ZDB-GEME-990415-92; hspa8.
GO; GO:0005524; F:ATP binding; IEA
PEAPPO: IPRO01023; HSP70.
PEAM; PF00012; HSP70; I.
PRINTS; PR00301; HEATSHOCK70.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                         SEQUENCE FROM N.A.
STRAIN=AB; TISSUE=Whole body;
Strausberg R.;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ProDom; PD000089; Hsp70; 1. PROSITE; PS00297; HSP70 1; 1. PROSITE; PS00329; HSP70-2; 1. PROSITE; PS01036; HSP70-3; 1. ATP-binding.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             05-JUL-2004 (TrEMBLrel. 27, 05-JUL-2004 (TrEMBLrel. 27, 05-JUL-2004 (TrEMBLrel. 27,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      PRELIMINARY;
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650 AA

PRT;

PRELIMINARY;

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Best Loca
Matches
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STRAIN=C57BL/6J; TISSUE=Embryonic Germ Cell;
MEDLINE=22388257; PubMed=12477932; DOI=10.1073/pnas.242603899;
Astaubberg R.L., Feingold E.A., Grouse L.H., Derge J.G.,
Altschul S.F., Zeeberg B., Bustow K.H., Schaefer C.F., Bhat N.K.,
Altschul S.F., Zeeberg B., Bustow K.H., Schaefer C.F., Bhat N.K.,
Altschul S.F., Jordan H., Moore T., Max S.I., Wang J., Hsich F.,
Diatchenco L., Marusina K., Farmer A.A., Rubin G.M., Hong L.,
Astapleton M., Soares M.B., Bonaldo M.F., Casavant T.L., Scheetz T.E.,
Brownstein M.J., Usdin T.B., Toshiyuki S., Carninci P., Prange C.,
A Bosak S.A., McEwan P.J., McKernan K.J., Malek J.A., Gunaratne P.H.,
Richards S., Worley K.C., Hale S., Garcia A.M., Gay L.J., Hulyk S.W.,
Villaton D.K., Muzny D.M., Sodergren B.J., Lu X., Gibbs R.A.,
Rahesley S., Worley K.C., Hale S., Garcia A.M., Gay L.J., Hulyk S.W.,
Whiting M., Madan A., Young A.C., Shevchenko Y., Bouffard G.G.,
Mhiting M., Touchman J.W., Green E.D., Dickson M.C.,
Blakesley R.W., Touchman J.W., Green E.D., Dickson M.C.,
Jones S.J., Marra M.A.;
T "Generation and initial analysis of more than 15,000 full-length human
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      EGERAMTKONNLLGRFELSGIPPAPRGVPQIEVTFDIDANGILNVTATDKSTGKANKITI 120
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             TNDKGRLSKEEIERMVQEAEKYKAEDEVQRERVSAKNALESYAFNMKSAVEDEGLKGKIS 180
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           EADKKKVLDKCQEVISWLDANTLAEKDEFEHKRKELEQVCNPIISGLYQGAGG-PG--PG 237
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            9
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HSSP; P19120; LATR.
GO; GO:0042623; F:ATPase activity, coupled; IDA.
GO; GO:0001754; F:chaperone activity; IDA.
GO; GO:0005515; F:protein binding; IPI.
GO; GO:00551085; F:chaperone cofactor dependent protein folding; IGI.
GO; GO:0006457; P:protein folding; IDA.
GO; GO:000074; P:regulation of cell cycle; IDA.
InterPro; IPR001023; H9p70.
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83.4%; Score 1096.5; DB 2; Length 646;
Best Local Similarity 81.4%; Pred. No. 1.1e-59;
Matches 214; Conservative 24; Mismatches 20; Indels 5;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Strausherg R.;
Submitted (FEB-2004) to the EMBL/GenBank/DDBJ databases.
-!- SIMILARITY: Belongs to the heat shock protein 70 family.
EMBL; BC066191; AAH66191.1; -.
HSSP; P19120; LATR.
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Proc. Natl. Acad. Sci. U.S.A. 99:16899-16903(2002).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  SEQUENCE FROM N.A.
STRAIN=C57BL/6J; TISSUE=Embryonic Germ Cell;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             PRINTS; PR00301; HEATSHOCK70.
ProDom; PB000009; HB970; 1.
PROSITE; PS00297; HB970 1; 1.
PROSITE; PS00329; HSP70 2; 1.
ATP-binding; Heat shock.
SEQUENCE 646 AA; 70871 MM;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               and mouse cDNA sequences.
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            SOW SUPER TO SERVICE STREET ST
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RESULT 34 Q8AVE2

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MEDLINE=2238825; PubMed=12477932; DOI=10.1073/pnas.242603899;
MEDLINE=2238825; PubMed=12477932; DOI=10.1073/pnas.242603899;
MALAUSER R.D., Collins F.S., Wagner L., Shenmen C.M., Schuler G.D.,
Altschul S.F., Zeeberg B. Buetcw K.H., Schaefer C.F., Bhat N.K.,
Altschul S.F., Jeeberg B. Buetcw K.H., Schaefer C.F., Bhat N.K.,
Altschul S.F., Jeeberg B. Buetcw K.H., Schaefer C.F., Bhat N.K.,
A Diatchenko L., Marusina K., Paramer A.A., Rubin G.M., Hong L.,
A Diatchenko L., Marusina K., Paramer A.A., Rubin G.M., Hong L.,
Stapleton M., Soares M.B., Bonaldo M.F., Casavant T.L., Scheetz T.E.,
A Raha S.S., Loquellano N.A., Peters G.J., Abramson R.D., Mullahy S.J.,
Bosak S.A., McEwan P.J., McKerran K.J., Malek J.A., Gunaratne P.H.,
Richards S., Worley K.C., Hale S., Garcia A.M., Gay L.J., Hulyk S.M.,
Yillalon D.K., Muzny D.M., Sodergren B.J., Lu X., Gibbs R.A.,
A Hilanon D.K., Muzny D.M., Sodergren B.J., Lu X., Gibbs R.A.,
Whiting M., Madan A., Young A.C., Shevchenko Y., Bouffard G.G.,
A Radriguez A.C., Grimwood J., Schmutz J., Myers R.M., Butterfield Y.S.,
Krzywinski M.I., Skalska U., Smailus D.E., Schnerch A., Schein J.E.,
M. Generation and initial analysis of more than 15,000 full-length human
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         61 EGERAMTKDNNLLGRFELSGIPPAPRGVPQIEVTFDIDANGILNVTATDKSTGKANKITI 120
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                                                                                                                                                                                                         Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
Amphibia; Batrachia; Anura; Mesobatrachia; Pipoidea; Pipidae;
Xenopodinae; Xenopus.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 MEDLINE=22341132; Pubmed=12454917; DOI=10.1002/dvdy.10174;
Klein S.L., Strausberg R.L., Wagner L., Pontius J., Clifton S.W.,
Richardson P.;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      'Genetic and genomic tools for Xenopus research: The NIH Xenopus
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81.3%; Pred. No. 1.1e-59;
ive 23; Mismatches 18; Indels 9;
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Submitted (DEC-2002) to the EMBL/GenBank/DDBJ databases.
-!- SIMILMENTY: Belongs to the heat shock protein 70 family.
EMBL; BC041201; AAM41201.1; -.
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Q8AVE2;
01-MAR-2003 (TrEMBLrel. 23, Created)
01-MAR-2003 (TrEMBLrel. 23, Last sequence update)
01-MAR-2004 (TrEMBLrel. 26, Last annotation update)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           and mouse cDNA sequences.";
Proc. Natl. Acad. Sci. U.S.A. 99:16899-16903(2002).
                                                                                                                                              Hsc70-prov protein.
Xenopus laevis (African clawed frog).
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ProDom; PD000089; HBp70; 1.
PROSITE; PS002297; HSP70_1; 1.
PROSITE; PS00129; HSP70_2; 1.
PROSITE; PS01036; HSP70_3; 1.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Dev. Dyn. 225:384-391(2002).
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tes 217; Conservative 2
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Pfam; PF00012; HSP70; 1.
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                                              EADKKKVLDKCQEVISWLDANTLAEKDEPEHKRKELEQVCNPIISGLYQGAGG----PG 235
EGERAMTKDNNLLGKFELTGIPPAPRGVPQIEVTFDIDANGILNVSAVDKSTGKENKITI 503
                        TNDKGRLSKEDIERMVQEADKYKAEDEKQRDKVSSKNSLESYAFNMKATVEDEKLKGKIS
                                                       Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
Mammalia; Eutheria; Primates; Catarrhini; Hominidae; Homo.
                                                                                                                                                                                                                                                                                                                                                                                                                                        Strausberg R.;
Submitted (ULL-2002) to the EMBL/GenBank/DDBJ databases.
-1- SIMILARITY: Belongs to the heat shock protein 70 family.
EMBL; BC034483; AAH34483.1; -.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 E4417F62C6D86ACA CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                             EMBL; BC034483; AAH34483.1; -.
HSSP; P08107; 1HJO.
GO; GO:0005524; F:AT binding; IEA.
GO; GO:0006457; P:protein folding; IEA.
GO; OO:0006986; P:response to unfolded protein; IEA.
InterPro; IPR001023; Hsp70.
                                                                                                                                                        01-OCT-2002 (TFEMBLrel. 22, Last sequence update) 01-MAR-2004 (TFEMBLrel. 26, Last annotation update) Heat shock 70kDa protein 1-like.
                                                                                                                                                                                                                                                                                                                                                                                                        Proc. Natl. Acad. Sci. U.S.A. 99:16899-16903(2002)
                                                                                                                                    641 AA
                                                                                      624 GMPGGFPGAGGAPTGGASSGPTIEEVD 650
                                                                             -- PGGF-GAQG-PKGGSGSGPTIEEVD 258
                                                                                                                                                   Created)
                                                                                                                                    PRT;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Pfam; PF00012; HSP70; 1.
PRINTS; PR00301; HBR76; 0.
ProDom; PD000089; HBP70.
PROSITE; PS00297; HSP70_1; 1.
PROSITE; PS00295; HSP70_2; 1.
PROSITE; PS01036; HSP70_2; 1.
ATP-binding; Heat shock.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  70393 MW;
                                                                                                                                                   (TrEMBLrel. 22,
                                                                                                                                    PRELIMINARY;
                                                                                                                                                                                        Homo sapiens (Human)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 641 AA;
                                                                                                                                                                                                                               SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                        SEQUENCE FROM N.A.
                                                                                                                                                                                                               NCBI_TaxID=9606;
                                                                                                                                                                                                                                                                                                                                                                                                                                rissum=Testis;
                                                                                                                                                                                                                                        TISSUE=Testis
                                                                                                                                                                                Name=HSPA1L;
                                                                                                                                                  01-OCT-2002
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                               504
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                                                                                                                                                                                                                                                                                                                                                  121 TNDKGRLSKEEIERMVQEAEKYKAEDEVQRERVSAKNALESYAFNMKSAVEDEGLKGKIS 180
                                                                                                                                                                                                                                                                                                                                                                             506 ANDKGRLSKEEIERMYLDAEKYKAEDEVQREKIAAKNALESYAFNMKSVVSDEGLKGKIS 565
                                                                                                                                                                                                                                                                                                                                                                                                                                                                181 EADKKKVLDKCQEVISWLDANTLAEKDEFEHKRKELEQVCNPIISGLYQGAGGPGGFG 240
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                                                                                                                                                                         386 KSEKVÓDLLLLDVAPLSLGLETAGGVMTALMKRNSTIPTKÓTÓIFTTYSDNÓPGVLIQVY
                                                                                                                   1 KSENVODLLLLDVAPLSLGLETAGGVMTALIKRNSTIPTKQTQIFTTYSDNQPGVLIQVY
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                                                              Gaps
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Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
Actinopterygii; Neopterygii; Teleostei; Ostariophysi; Cypriniformes;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Gaps
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     Length 641;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 SEQUENCE FROM N.A.
Watabe S., Kondo H., Hashimoto S.;
Submitted (COT-2002) to the EMBL/GenBank/DDBJ databases.
-!- SIMILARITY: Belongs to the heat shock protein 70 family.
EMBL; AB092840; BAC67185.1; -.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              566 ESDKONKILDKCNELLSWLEVNQLAEKDEFDHKRKELEQMCNPIITKLYQG-
                                                           Indels
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GO; GO:0005524; F:ATP binding; IEA.
GO; GO:0006457; F:Protein folding; IEA.
GO; GO:0006457; F:protein folding; IEA.
GO; GO:0006457; F:protein folding; IEA.
InterPro; IPR001023; Hsp70.
Pfam; PF00012; HSP70; 1.
PRINTS; PR00319; Hsp70; 1.
PROSITE; PS00329; HSP70_2; 1.
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Last annotation update)
Query Match 83.3%; Score 1095; DB 2; Best Local Similarity 81.5%; Pred. No. 1.4e-59; Matches 216; Conservative 17; Mismatches 16;
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01-JUN-2003 (TrEMBLrel. 24, Created)
01-JUN-2003 (TrEMBLrel. 24, Last seq
01-JUN-2004 (TrEMBLrel. 26, Last ann
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NCBI_TaxID=7957;
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STRAIN=B10.A;
                                                                                                                            NON TER
SEQUENCE
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                                                                                                                                                                                                                         Query Match
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TYDKGRLSKBD1ERMVHEAEKYKSEDDVQREKVSAKNGLESYAFNMKSTVEDEKLKGK1S
                                                            EADKKKVLDKCQEVISWLDANTLAEKDEFEHKRKELEQVCNPIISGLYQGAGG-PG---
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MEDLINE=21655112; PubMed=11797099; DOI=10.1007/800251-001-0381-0;
van Kooij M., de Groot K., van Vugt H., Aten J., Snoek M.;
"Genotype versus phenotype: conflicting results in mapping a lung
tumor susceptibility locus to the G7c recombination interval in the
mouse MHC class III region.";
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Mammalia, Butheria, Rodentia, Sciurognathi, Muridae, Murinae, Mus
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        MEDLINE=97124840; PubMed=8954773; DOI=10.1006/geno.1996.0585; Snoek M., van Dinten L., van Vugt H.; "A novel gene, G7e, resembling a viral envelope gene, is located at the recombinational hot spot in the class III region of the mouse
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              MEDLINE=94299288; PubMed=8026864;
Snoek M., Olavesen M.G., van Vugt H., Milner C.M., Teuscher C.,
Campbell R.D.;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             MEDLINE=99216447; PubMed=10199925; DOI=10.1007/8002510050522;
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-!- SIMILARITY: Belongs to the heat shock protein 70 family.
EMBL; AF397035; AAL14448.1; -.
HSSP; P04475; 1027.
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(TrEMBLrel. 19, Last sequence update)
(TrEMBLrel. 26, Last annotation update)
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GO; GO:0006457; P:protein folding; IEA.
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01-MAR-2004 (TrEMBLrel. 26, Last ann
Heat shock protein Hsc70t (Fragment)
                                                                                                                                                                                        236 -- PGGF-GAQGPKGGSGSGPTIEEVD
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Immunogenetics 49:468-470(1999).
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Mammalia; Eutheria; Rodentia; Sciurognathi; Muridae; Murinae; Mus
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Snoek M., Olavesen M.G., van Vugt H., Milner C.M., Teuscher C.,
Campbell R.D.;
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MEDLINE=99216447; PubMed=10199925; DOI=10.1007/8002510050522;
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MEDLINE=97124840; PubMed=8954773; DOI=10.1006/geno.1996.0585;
                                                                                                                                                                                   Length 282;
                                                                                                                                                                                                                                       Indels
                                                                                                                                282 AA; 30884 MW; D8177623CF106307 CRC64;
GO; GO:0006986; P:response to unfolded protein; IEA. Parm; PR0012; HSP70; 1. PR1NTS; PR00301; HEATSHOCK70. ATP-binding; Heat shock.
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01-DEC-2001 (TrEMBLrel. 19, Last sequence update)
01-MAR-2004 (TrEMBLrel. 26, Last annotation update)
                                                                                                                                                                                 83.1%; Score 1092; DB 2;
llarity 84.5%; Pred. No. 7.9e-60;
Conservative 17; Mismatches 21;
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tes 218; Conserv
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SEQUENCE FROM N.A.
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SEQUENCE FROM N.A
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Analysis of the gene-dense major histocompatibility complex class III
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536 GYTP-GRAATGPTIEEVD 552
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Nature 346:623-628(1990)
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                                               Snoek M., Teuscher C., van Vugt H.; "Molecular analysis of the major MHC recombinational hot spot located within the G7c gene of the murine class III region that is involved in
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1 KSENVQDLILLDVAPLSLGLETAGGVMTALIKRNSTIPTKQTQIPTTYSDNQPGVLIQVY
                                                                                                                                                                                                           STRAIN=B10.A;
MEDLINE=21655112; PubMed=11797099; DOI=10.1007/800251-001-0381-0;
van Kooij M., de Groot K., van Vugt H., Aten J., Snoek M.;
"Genotype versus phenotype: conflicting results in mapping a lung
tumor susceptibility locus to the G7c recombination interval in the
mouse MHC class III region.";
Immunogenetics 53:65-661(2001).
-I- SIMILARITY: Belongs to the heat shock protein 70 family.
EMBL; AF397036; AAL14456.1;
HSSP; PO8107; ISSM.
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Eukaryota, Metazoa, Chordata, Craniata, Vertebrata, Buteleostomi;
Mammalia, Eutheria, Rodentia, Sciurognathi, Muridae, Murinae, Mus.
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84.5%; Pred. No. 1.4e-59;
ive 17; Mismatches 21; Indels
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Bubhadel-14656967; DOI=10.1101/gr.1736803;

Xie T., Rowen L., Aguado B., Ahearn M.E., Madan A., Qin S.,

Campbell R.D., Hood L.;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    461 AA; 50982 MW; C08082B37DB90C75 CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                         GO; GO:0005524; F:ATP binding; IEA.
GO; GO:0006457; P:protein folding; IEA.
GO; GO:0006986; P:response to unfolded protein; IEA
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Last annotation update)
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                            MEDLINE=98211706; PubMed=9551980;
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445 GYTP-GRAATGPTIEEVD 461
                                                                                                                     disease susceptibility.";
J. Immunol. 160:266-272(1998).
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PRINTS; PR00301; HEATSHOCK70.
PROSITE; PS00329; HSP70_2; 1.
PROSITE; PS01036; HSP70_3; 1.
ATP-binding; Heat shock.
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ses 218; Conserv
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SEQUENCE
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TYDXGRLSKEBIBRMVQEAERYKAEDEGQREKIAAKNALESYAFNMKSAVGDEGLKDKIS 476
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Deluca-Flaherty C., McKay D.B.; ^{\circ}"Nucleotide sequence of the cDNA of a bovine 70 kilodalton heat shock
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Gaps
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MEDLINE=90348961; PubMed=2143562; DOI=10.1038/346623a0;
Flaherty K.M., de Luca-Flaherty C., McKay D.B.;
"Three-dimensional structure of the ATPase fragment of a 70K heat-
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    01-NOV-1990 (Rel. 16, Created)
01-NOV-1990 (Rel. 16, Last sequence update)
25-OCT-2004 (Rel. 145, Last annotation update)
Heat shock cognate 71 kDa protein.
Name=HSPA8; Synonyms=HSC70;
Bos caurus (Bovine).
Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
Mammalia; Eutheria; Cetartiodactyla; Ruminantia; Pecora; Bovidae;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         2;
region and its comparison to mouse.";
Genome Res. 13:2621-2636(2003).
-!- SIMILARITY: Belongs to the heat shock protein 70 family.
EMBL; AF109905; AAC84149.1; -.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                     552 AA; 61020 MW; AB81C1BA1F55DCAC CRC64;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Query Match

83.1%; Score 1092; DB 2;
Best Local Similarity 84.5%; Pred. No. 1.8e-59;
Matches 218; Conservative 17; Mismatches 21;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        650 AA.
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Nucleic Acids Res. 18:5569-5569(1990)
                                                                                                                          HSSP; P08107; 1S3X.

GO; GO:000524; F:ATP binding; IEA.
Interpro; IPR001023; Hsp70.
PEAM; PP00012; HSP70; 1.
PRINTS; PR00301; HEATSHOCK70.
PROOFM; PD000089; Hsp70; 1.
PROSITE; PS00329; HSP70 2; 1.
PROSITE; PS01036; HSP70 2; 1.
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MEDLINE=91016866; PubMed=2216746;
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MEDLINE=94230372; PubMed=8175707; Flaherty C., McKay D.B.; Flaherty K.M., Wilbanks S.M., Deluca-Flaherty C., McKay D.B.; "Structural basis of the 70-kilodalton heat shock cognate protein ATP hydrolytic activity. II. Structure of the active site with ADP or ATP bound to wild type and mutant ATPase fragment."; J. Biol. Chem. 269:12899-12907(1994).
                                                                                                                                                                                                                                                                                                              X-RAY CRYSTALLOGRAPHY (1.7 ANGSTROMS) OF 1-381.
MEDLINE-99017893; Pubmed-9799500; DOI=10.1021/bi991510x;
Sousa M.C., McKay D.B.;
"The hydroxyl of threonine 13 of the bovine 70-kDa heat shock cognate protein is essential for transducing the ATP-induced conformational
                                                                                                                                                                                                                                                                                                                                                                                                                                                                            X-RAY CRYSTALLOGRAPHY (1.9 ANGSTROMS) OF 1-381 OF MUTANTS.
MEDLINE=99379828; PubMed=10451379; DOI=10.1021/bi990816g;
Johnson E.R., McKay D.B.;
Mapping the role of active site residues for transducing an ATP-induced conformational change in the bovine 70-kDa heat shock cognate protein.";
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Biochemistry 38:10823-10830(1999).
--- PUNCTION: Chaperone.
--- SUBCELLULA LOCATION: Translocates rapidly from the cytoplasm to the nuclei, and especially to the nucleoli, upon heat shock (By
                                                                                                                                            X-RAY CRYSTALLOGRAPHY (1.9 ANGSTROMS) OF 1-385.
MEDLINE-98254532; PubMed=9585559; DOI=10.1021/bi973046m;
Wilbanks S.M., McKay D.B.;
"Structural replacement of active site monovalent cations by the
epsilon-amino group of lysine in the ATPase fragment of bovine
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         INDUCTION: Constitutively synthesized. SIMILARITY: Belongs to the heat shock protein 70 family.
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                                                                                                                                                                                                                                                                                                                                                                                                                                       Biochemistry 37:15392-15399(1998).
                                                                                                                                                                                                                                                                         Biochemistry 37:7456-7462(1998).
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1ATS; X-ray; @=1-386.
1BAO; X-ray; @=1-386.
1BAL; X-ray; @=1-386.
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A=1-381.
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S11456; S11456
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1BUP;
1HPM;
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1NGG;
1NGH;
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1KAZ;
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1NGB;
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1NGJ;
100M;
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GMPGGMPGGADGASTGGGGGPTIEEVD 655
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                                                                                                                                      -- PGGF-GAQGPKGGSGSGPTIEEVD 258
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Flam, PPO0012; HSP70; 1.
PRINTS; PRO0301; HSP70; 1.
PRODOM; PO00089; HSP70; 1.
PROSITE; PS00297; HSP70_2; 1.
PROSITE; PS0136; HSP70_2; 1.
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Matches 216; Conservative
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SEQUENCE 655 AA; 712
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                        884 KSENVODLLLLDVTPLSLGIETAGGVMTVLIKRNTTIPTKQTQTFTTYSDNOPGVLIQVY 443
                                                                                          EGERAMTKDNNLLGRFELSGIPPAPRGVPQIEVTFDIDANGILNVTATDKSTGKANKITI 120
                                                                                                                TNDKGRLSKEEIERMVQEAEKYKAEDEVQRERVSAKNALESYAFNMKSAVEDEGLKGKIS 180
                                                                                                                                                                                                               TNDKGRLSKEDIERWVQEAEKYKAEDEKQRDKVSSKNSLKSYARNMKATVEDEKLQGKIN 563
                                                                                                                                                                                                                                                                                 EADKKKVLDKCQEVISWLDANTLAEKDEFEHKRKELEQVCNPIISGLYQGAGG----PG 235
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                                                                                                                                                                                                                                                                                                         564 DEDKQKILDKCNEIINWLDKNQTAEKEEFEHQQKELEKVCNPIITKLYQSAGAMPGGMPG
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KSENVODLLLLDVAPLSLGLETAGGVMTALIKRNSTIPTKOTOIFTTYSDNOPGVLIOVY
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Song H.D., Wu X.Y., Sun X.J., Zhou Y., Liu T.X., Deng M., Zh.
Shong Y., Chen Y., Ruan Z., Jiang C.L., Fan H.Y., Zon L.I.,
Kanki J.P., Look A.T., Chen Z.;
Submitted (SEP-2003) to the EMBL/GenBank/DDBJ databases.
-!- SIMILARITY: Belongs to the heat shock protein 70 family.
EMBL; AV422994; AAQ97970.1; -.
HSSP; P19120; LATR.
ZEB-GENE-990415-92; hspa8.
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ZFIN; ZDB-GENE-990415-92; hspa8.

GO; GO:0005524; F:ATP binding; IEA.

GO; GO:0005524; F:ATP binding; IEA.

GO; GO:0005686; P:response to unfolded protein; IEA.

InterPro; IPR001023; Hsp70.

Pfam; PF00012; HSP70; 1.

PRINTS; PR00301; HSP70; 1.

PROSITE; PS00399; HSP70; 1.

PROSITE; PS0136; HSP70; 1.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 71228 MW; AB7AB34156B817EE CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           05-JUL-2004 (TrEMBLrel. 27, Last sequence update)
05-JUL-2004 (TrEMBLrel. 27, Last annotation update)
Heat shock 70kDa protein 8.
Name=happa 8, Synonyms=HSPA8,
Brachydanio rerio (Zebrafish) (Danio rerio).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             83.0%; Score 1091; DB 2;
80.8%; Pred. No. 2.5e-59;
ive 19; Mismatches 24;
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                                                                                                                                                                                                                                                                                                                                                                                                        GMPGGFPGGAPPSGGASSGPTIEEVD 650
                                                                                                                                                                                                                                                                                                                                                                                236 -- PGGF--GAQGPKGGSGSGPTIEEVD 258
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Created)
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Matches 215; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            PRELIMINARY;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       O6TEO5;
05-JUL-2004
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OGTEGS

AC 06TEGS

DT 05-JU

DE Heat

GN Brach

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OX (IU)

RP SEQUE

RA Sheng

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                                                                                          S64 DEDKOKILDKCNEVIGWLDKNQTAEREEFEHQQKELEKVCNPIITKLYQSAGGMPGGMPE
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Bukaryota, Mecazoa, Mollusca, Bivalvia, Pteriomorphia, Pectinoida,
Pectinoidea, Pectinidae, Chlamys.
NCBI_TaxID=202578;
                                                         181 EADKKKVIDKCOEVISWLDANTLAEKDEFEHKRKELEQVCNPIISGLYQGAGG-PG-
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             13,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             83.0%; Score 1090.5; DB 2; Length 655; 79.7%; Pred. No. 2.7e-59; Indels 13; tive 16; Mismatches 26; Indels 13;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   SEQUENCE FROM N.A.

Wu L., Song L., Xu W., Li H., Guo X., Xiang J.;

Wu L., Song L., Xu W., Li H., Guo X., Xiang J.;

Wu Linettification and Cloning of Heat Shock Protein 70 Gene from Starting Farreri.";

Gaojishu Tongxun 13:75-79 (2003).

-!- SIMILARITY: Belongs to the heat shock protein 70 family.

HSSP: P19120: 1ATR.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       71261 MW; FF8A456694F7E078 CRC64;
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GO; GO:0006457; P:protein folding; IEA.
GO; GO:0006986; P:response to unfolded protein; IEA
                                                                                                                                                                                                                                                                                                                                                                                                                         05-JUL-2004 (TrEMBLrel. 27, Created)
05-JUL-2004 (TrEMBLrel. 27, Last sequence update)
05-JUL-2004 (TrEMBLrel. 27, Last annotation update)
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SEQUENCE FROM N.A.
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SEQUENCE FROM N.A.
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Rattus norvegicus (Rat).
Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
Mammalia; Eutheria; Rodentia; Sciurognathi; Muridae; Murinae; Rattus.
NCBI_TaxID=10116;
                                                                                                                                                                                                                                                                                                                                                                                                                                        Gaps
                                                                                           Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
Actinopterygii; Neopterygii; Teleostei; Euteleostei; Neoteleostei;
Acanthomorpha; Acanthopterygii; Percomorpha; Pleuronectiformes;
Pleuronectoidei; Paralichthyidae; Paralichthys.
                                                                                                                                                                                                  "Complementary DNA cloning of HSC71, a 71 kDa heat shock cognate protein, in Japanese flounder Paralichtys olivaceus."; Fisheries Sci. 64:388-36(1998).
-!- STMILARLTY: Belongs to the heat shock protein 70 family. BRML; AB006814; BAD05136.1; -- HSSP; P9120; 1ATR.
GO; GO:0005524; F:AFP binding; IEA.
                                                                                                                                                                   SEQUENCE FROM N.A.
Yokoyama Y., Hashimoto H., Kubota S., Kinoshita M., Toyohara H.,
Sakaguchi M., Kanamori M.;
                                                                                                                                                                                                                                                                                                                                                                                                               Length 650;
                                                                                                                                                                                                                                                                                                                                                                                                              82.9%; Score 1089.5; DB 2; Length
80.1%; Pred. No. 3.1e-59;
ive 20; Mismatches 24; Indels
                                                                                                                                                                                                                                                                                                                                                                                       650 AA; 71158 MW; 9F6A4A573342EBA5 CRC64;
                                   Last sequence update)
Last annotation update)
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Last annotation update)
650 AA
                                                                               Paralichthys olivaceus (Japanese flounder).
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                       Created)
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ProDom; PD000089; Hsp70; 1.
PROSITE; PS00297; HSP70_1; 1.
PROSITE; PS01329; HSP70_2; 1.
PROSITE; PS01036; HSP70_3; 1.
                    (TrEMBLrel. 27, C
(TrEMBLrel. 27, L
(TrEMBLrel. 27, L
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Matches 214; Conservative
PRELIMINARY;
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                                              05-JUL-2004
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                      05-JUL-2004
05-JUL-2004
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              181 EADKKKVLDKCOEVISWLDANTLAEKDEFEHKRKELEQVCNPIISGLYQ-GAGGP--GPG 237
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     9
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                  STRAIN=Brown Norway;
Boehm S., Bornay,
Boehm S., Bornay,
Lang N., Lehrack S., Thiel J., Sontag M., Hurt P., Himmelbauer H.,
Sudbrak R., Reinhardt R.;
Sudbrak R., Reinhardt R.;
Subnitted (DEC-2003) to the EMBL/GenBank/DDBJ databases.
-! - SIMILARITY: Belongs to the heat shock protein 70 family.
EMBL, EX883045; CAE83979:1; --
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Gaps
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Actinopterygii; Neopterygii; Teleostei; Ostariophysi; Siluriformes;
Ictaluridae; Ictalurus.
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STRAIN=Brown Norway;

BubMed=15060004, DoI=10.1101/gr.1987704;

Hurt P., Walter L., Sudbrak R., Klages S., Mueller I., Shiina T.,

Inoko H., Lehrach H., Guenther E., Reinhardt R., Himmelbauer H.;

"The genomic sequence and comparative analysis of the rat major histocompatibility complex.";

Genome Res. 14:631-639(2004).
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          GO; GO:0005524; F:ATP binding; IRA.
GO; GO:0006457; P:protein folding; IEA.
GO; GO:0006986; P:response to unfolded protein; IEA
InterPro; IPR001023; Hsp70.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   82.9%; Score 1089; DB 2;
83.5%; Pred. No. 3.2e-59;
live 17; Mismatches 18;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            01-FEB-1996 (Rel. 33, Created)
01-FEB-1996 (Rel. 33, Last sequence update)
01-5D-2004 (Rel. 44, Last annotation update)
Heat shock cognate 71 kDa protein.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Ictalurus punctatus (Channel catfish).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          238 GFGAQGPKGGSGSGPTIEEVD 258
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PRINTS; PR00301; HEATSHOCK70.
ProDom; PD000089; HSP70; 1.
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PROSITE; PS00229; HSP70_2; 1.
PROSITE; PS01036; HSP70_3; 1.
ATP-binding; Heat shock.
SEQUENCE 641 AA; 70549 MW;
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Matches 218; Conserv
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AC P4777 I
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DE Heat s
GN Name=H
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SEQUENCE
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                                                                        This SWISS-PROT entry is copyright. It is produced through a collaboration between the Swiss Institute of Bioinformatics and the EMBL outstation the European Bioinformatics Institute. There are no restrictions on its most by non-profit institutions as long as its content is in no way modified and this statement is not removed. Usage by and for commercial entities requires a license agreement (See http://www.isb-sib.ch/announce/or send an email to license@isb-sib.ch).
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Luft J.C., Wilson M.R., Bly J.E., Miller N.W., Clem L.W.,
"Identification and characterization of a heat shock protein 70 family
member in channel catfish (Icalurus punctatus).";
Comp. Biochem. Physiol. 1138:169-174(1996).
-!- SIMILARITY: Belongs to the heat shock protein 70 family.
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Bukaryota; Metazoa; Chordata; Craniata; Vertebrata; Buteleostomi;
Amphibia; Batrachia; Caudata; Salamandroidea; Ambystomatidae;
                                                                                                                                                                                                                                                                                                                                                               8
                                                                                                                                                                                                                                                                                                                                     82.8%; Score 1088; DB 1; Length 649;
80.8%; Pred. No. 3.8e-59;
ive 19; Mismatches 24; Indels 8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    SEQUENCE FROM N.A.
Ordonez M.R., Pichon L.L., Laurens V.;
Submitted (APR-2001) to the EMBL/GenBank/DDBJ databases.
-- SIMILARITY: Belongs to the heat shock protein 70 family.
EMBL, AV029210; ARX31583.1; --
HSSP; P19120; 1ATR.
                                                                                                                                                                                                                                                     TIGREAMS; TIGREACT | HSPTO 1; 1.
PROSITE; PS00297; HSPTO 2; 1.
PROSITE; PS01036; HSPTO 2; 1.
PROSITE; PS01036; HSPTO 3; 1.
ATP-binding; Heat shock; Multigene family.
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Last annotation update)
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PRINTS; PR00301; HEATSHOCK70.
ProDom; PD000089; HSp70; 1.
TIGRFAMs; TIGR01991; HSCA; 1.
                                                                                                                                                                           EMBL; U22460; AAA64872.1; -. HSSP; P08109; 1CKR.
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01-MAR-2004 (TrEMBLrel. 26,
Heat shock protein 70.
                                                                                                                                                                                                   InterPro; IPR001023; Hsp70.
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Matches 215, Conservative
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STAINLEBW.1W/GUN.

WEDLINE=95012453; PubMed=7927536;

Walter L., Rauh F., Guenther E.;

"Comparative analysis of the three major histocompatibility complex-
ir linked hear shock protein 70 (Hsp70) genes of the rat.";

"Inmunogenetics 40:325-330(1994)

"I mmunogenetics 40:325-330(1994)

"I mmunogenetics 40:325-330(1994)

"I mmunogenetics 40:325-330 (1994)

"I munogenetics analysis of the through their ability to recognize nonmative conformations of through membrane translocation, or following stress-induced damage.

"I NIDUCTION: By heat shock."
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Mammalia; Butheria; Rodentia; Sciurognathi; Muridae; Murinae; Rattus.
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01-0CT-1996 (Rel. 34, Last sequence update)
05-JUL-2004 (Rel. 44, Last annotation update)
Heat shock protein 1A (Heat shock 70 kDa protein 3) (HSP70.3)
Name-Hspala; Synonyms-Hsp70-3;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Ouery Match 82.8%; Score 1088; DB 2; Length 651; Best Local Similarity 80.6%; Pred. No. 3.8e-59; Matches 216; Conservative 22; Mismatches 20; Indels 10
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                     71055 MW; 86C75FA0DCEFCB9D CRC64;
GO; GO:0005524; F:ATP binding; IEA.
GO; GO:0006457; P:protein folding; IEA.
GO; GO:0006457; P:protein folding; IEA.
GO; GO:0006986; P:response to unfolded protein; IEA.
PFO012; HSP70; 1.
PRINTS; PR00301; HEATSHOCK70.
PRODM; PD000089; HSP70; 1.
PROSITE; PS00129; HSP70 1; 1.
PROSITE; PS00136; HSP70 2; 1.
PROSITE; PS00136; HSP70 2; 1.
ATP-binding; Heat shock.
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RESULT 49
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modified and this statement is not removed. Usage by and for commercial entities requires a license agreement (See http://www.isb-sib.ch/announce/or send an email to license@isb-sib.ch).
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X MEDLINE=98351992; PubMed=9685725;
A Ito Y., Ando A., Ando H., Ando J., Saijoh Y., Inoko H., Fujimoto H.;
A Ito Y., Ando A., Ando H., Ando J., Saijoh Y., Inoko H., Fujimoto H.;
To Y., Ando A., Ando H., Ando J., Saijoh Y., Inoko H., Fujimoto H.;
To Y., Ando A., Ando H., Ando J., Saijoh Y., Inoko H., Fujimoto H.;
Toocated in the class III region of the major histocompatibility
T complex of mouse and man.";
J. Biochem. 124.347-353 (1998).
L. J. Biochem. 124.347-353 (1998).
C -1 - SIMILARITY: Belongs to the heat shock protein 70 family.
R MSD; MGI:96231; Hspall.
R MGD; MGI:96231; Hspall.
R MGO; GO:0005524; F:ATP binding; IEA.
R GO; GO:0005986; P:response to unfolded protein; IEA.
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Mammalia; Butheria; Rodentia; Sciurognathi; Muridae; Murinae; Mus.
NCBI_TaxID=10090;
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83.5%; Pred. No. 4.3e-59;
ive 17; Mismatches 18; Indels
                                                                                                                                                                                                                                                                                                                                         PROSITE; PS00297; HSP70_1; 1.
PROSITE; PS00329; HSP70_2; 1.
PROSITE; PS01036; HSP70_3; 1.
ATP-binding; Chaperone; Heat shock; Multigene family.
SEQUENCE 641 AA; 70549 MW; 8C77AA9FD98B9252 CRC64;
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01-NOV-1998 (TYEMBLrel. 08, Last sequence update)
01-NAR-2004 (TYEMBLrel. 26, Last annotation update)
Spermatid-specific heat shock protein 70.
Name=Hspall; Synonyms=Hsc70t;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          641 AA
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PRINTS; PR00301; HEATSHOCK70.
ProDom; PD000089; Hsp70; 1.
TIGRFAMs; TIGR01991; HSCA; 1.
                                                                                                       EMBL; X77209; CAA54424.1; -. PIR; S41415; S41415. HSSP; P08107; 1HJO. InterPro; IPR001023; H8p70.
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GO; GO:0006986; P:response
InterPro; IPR001023; Hsp70.
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Matches 218; Conservative
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088686
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                                                                                                                                                                                                                                                             386 KSEKVQDLLLLDVAPLSLGLETAGGVMTVLIKRNSTIPTKQTQIFTTYSDNQPGVLIQVY
                                                                                                                                                                                                                                                                                                                               506 TNDKGRLSKEEIERMVQEAERYKAEDEGQREKIAAKNÅLESYAFNMKSAVGDEGLKDKIS
                                                                                                                                                                                                                                    1 KSENVQDLLLLDVAPLSLGLETAGGVMTALIKRNSTIPTKQTQIFTTYSDNQPGVLIQVY
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         TISSUE=Muscle;
MEDLINE=22174674; PubMed=12893256; DOI=10.1016/S0006-291X(03)01206-3;
MAII K.S., Dorgai L., Abraham M., Hermesz E.;
"Tissue- and stressor-specific differential expression of two hsc70
                                                                                                                                                                                                    Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Cyprinus carpio (Common carp).
Bukaryota, Metazoa, Chordata, Craniata, Vertebrata, Buteleostomi;
Actinopterygii, Neopterygii, Teleostei, Ostariophysi, Cypriniformes,
                                                                                                                                                                                                    7
                                                                                                                                                               Length 641;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Khaled S.A., Hermesz B.;
Submitted (JAN-2003) to the EMBL/GenBank/DDBJ databases.
-1- SIMILARITY: Belongs to the heat shock protein 70 family.
EMBL; AY219845; AAP51388.1; -.
                                                                                                                                                                                                  Indels
                                                                                                                           70623 MW; D19B11742A03BC2F CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 01-OCT-2003 (TrEMBLrel. 25, Created)
01-OCT-2003 (TrEMBLrel. 25, Last sequence update)
01-MAR-2004 (TrEMBLrel. 26, Last amnotation update)
Constitutive heat shock protein HSC70-2 (Fragment).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               HSSP, F19120; IATR.
GO; GO:0005524; F:ATP binding; IRA.
GO; GO:0006457; P:protein folding; IRA.
GO; GO:000696; P:response to unfolded protein; IRA
                                                                                                                                                            82.7%; Score 1087; DB 2;
84.1%; Pred. No. 4.3e-59;
ive 17; Mismatches 22;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 genes in carp.";
Biochem. Biophys. Res. Commun. 307:503-509(2003)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 644 AA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   241 AQGPKGGSGSGPTIEEVD 258
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        PRINTS; PR00301; HEATSHCK70.
ProDom; PD000089; Hsp70; 1.
PROSITE; PS00297; HSP70 1; 1.
PROSITE; PS00329; HSP70 2; 1.
PROSITE; PS01036; HSP70 3; 1.
ATP-binding; Heat shock.
SEQUENCE 641 AA; 70623 MW;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       InterPro; IPR001023; #sp70.
Pfam; PF00012; HSP70; 1.
Probom, PD000089; Hsp70; 1.
PROSITE; PS00297; HSP70_1; 1.
PROSITE; PS00329; HSP70_2; 1.
PROSITE; PS01036; HSP70_3; 1.
                                                                                                                                                                                 Best Local Similarity 84.1%
Matches 217; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               PRELIMINARY;
Pfam; PF00012; HSP70; 1.
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NCBI_TaxID=7962;
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SEQUENCE FROM N.A.
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SEQUENCE FROM N.A.
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                                                                                                                                                               Query Match
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TNDKGRLSKEEIERMVQEAEKYKAEDEVORERVSAKNALESYAFNMKSAVEDEGLKGKIS 180
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ProDom; PD000089; Hsp70; 1.
TIGREAMS; TIGR01991; HscA; 1.
PROSITE; PS00297; HSP70_1; 1.
PROSITE; PS00329; HSP70_2; 1.
PROSITE; PS01036; HSP70_3; 1.
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InterPro; IPR001023; Hsp70.
Pfam; PF00012; HSP70; 1.
                                                                                                                                                                                                                                                                  STANDARD;
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PIR; I49761; I49761.
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                                                                                                                                                                                                 EGERAMIKDNNLLGRFELSGIPPAPRGVPQIEVIFDIDANGILNVTATDKSTGKANKITI 120
                                                                                                                                                                                                                     TNDKGRLSKEEIERMVQEAEKYKAEDEVQRERVSAKNALESYAFNMKSAVEDEGLKGKIS 180
                                                                                                                                                                                                                                                                                                                                    181 EADKKKVLDKCQEVISWLDANTLAEKDEFEHKRKELEQVCNPIISGLYQGAGG-PG---- 235
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                                                                                                                                 1 KSENVQDLLLLDVAPLSLGLETAGGVMTALIKRNSTIPTKQTQIFTTYSDNQPGVLIQVY
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                                                                                                 Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Aequipecten irradians (Bay scallop).
Eukaryota, Metazoa, Mollusca; Bivalvia; Pteriomorphia; Pectinoida;
Pectinoidea; Pectinidae; Argopecten.
NCBI_TaxID=31199;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      16;
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                                                              Length 644;
                                                             82.6%; Score 1086; DB 2; Length 64
80.5%; Pred. No. 5e-59;
ive 21; Mismatches 23; Indels'
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 71801 MW; 43C3E8EA71B51AB3 CRC64;
                           644 AA; 70594 MW; CD8E8269BA7776F4 CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Created)
Last sequence update)
Last annotation update)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          659 AA
                                                                                                                                                                                                                                                                                                                                                                                                                            236 -- PGGF-GAQGPKGGSGSGPTIEEVD 258
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                                                                                                 Conservative
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ATP-binding; Heat shock.
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                                                                              Local Simi.
             NON TER
SEQUENCE
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QGRYT8

ID QGRYT8

DT QGRYT

DT QG-JT

DT O5-JT

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This SWISS-FROT entry is copyright. It is produced through a collaboration between the Swiss Institute of Bioinformatics and the EMBL outstation the Buropean Bioinformatics Institute. There are no restrictions on its use by non-profit institutions as long as its content is in no way modified and this statement is not removed. Usage by and for commercial entities requires a license agreement (See http://www.isb-sib.ch/announce/or send an email to license@isp-sib.ch)
TNDKGRLSKDEIERMVNDAEKYKAEDDVQRSRVSAKNALESYAFQMKSTVEDDNLKSKIS 565
                                                                                       181 EADKKKVLDKCQEVISWLDANTLAEKDEFEHKRKELEQVCNPIISGLYQGAGGPG---- 235
                                                                                                                                 D1627; Q61693;

O1-AUG-1990 (Rel. 15, Created)

O1-FEB-1996 (Rel. 33, Last sequence update)

25-OCT-2004 (Rel. 45, Last annotation update)

Heat shock 70 kDa-like protein 1.

Heat shock 70 kDa-like protein 1.

Mamm=Hapall; Synoryms=H8c70t;

Mus musculus (Mouse).

Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;

Mammalia; Butheria; Rodentia; Sciurognathi; Muridae; Musinae; Mus
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           mouse spermatids.";
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               MEDLINE-9429288; PubMed-8026864;
Snoek M., Olavesen M.G., van Vugt H., Milner C.M., Teuscher C.,
Campbell R.D.;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      of spermatogenesis.
-!- SIMILARITY: Belongs to the heat shock protein 70 family.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Fujimoto H.; Submitted (AUG-1995) to the EMBL/GenBank/DDBJ databases
                                                                                                                                                                                                                                                                         626 MPGGMPGGMPGGADSQSTGGSGGPTIEEVD 659
                                                                                                                                                                                                                               -----PGGF--GAQGPKGGSGSGPTIEEVD 258
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     MEDLINE=90147735; PubMed=2302214;
Mateumoto M., Fujimoto H.;
Mateumoto G. a hsp70-related gene expressed in Biochem. Biochem. Bophys. Res. Commun. 166:43-49(1990)
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Pfam; PF00012; HSP70; 1.

PRINTS; PR00301; HEATSHOCK70.

ProDom; PD000089; HSP70; 1.

TIGREAMS; TIGR01991; HSP70; 1.

PROSITE; PS00297; HSP70_1; 1.

PROSITE; PS01036; HSP70_2; 1.

ATP-binding; Haat shock.

CONFLICT 182 183 AX
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    TNDKGRLSKÆEIERMVQEAERYKAEDEGQREKIAAKNALESYAFNMKSAVGDEGLKDKIS 565
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            EADKKKVLDKCQEVISWLDANTLAEKDEFEHKRKELEQVCNPIISGLYQGAGGPGFG 240
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            9
                                                                                                                                                                                                                                                          386 KSEKVQDLLLLDVAPLSLGLETAGGVMTVLIKRNSTIPTKQTQIFTTYSDNQPGVLIQVY
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Eukaryota, Metazoa, Chordata, Craniata, Vertebrata, Euteleostomi, Actinopterygii, Neopterygii, Teleostei, Buteleostei, Protacanthopterygii, Salmoniformes, Salmonidae, Oncorhynchus, NCBI_TaxID=8022;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         SECUENCE OF 1-213 FROM N.A.
MEDLINE=8505630; PubMed=6092938;
KCthary R.K., Jones D., Candido E.P.M.;
"70-Kilodalton heat shock polypeptides from rainbow trout: characterization of CDNA sequences";
MO1. Cell. Biol. 4:1785-1791(1984).
-: SIMILARITY: Belongs to the heat shock protein 70 family.
                                                                                                             Query Match 82.6%; Score 1085; DB 1; Length,641; Best Local Similarity 84.1%; Pred. No. 5.7e-59; Matches 217; Conservative 17; Mismatches 22; Indels
Heat shock; Multigene family; Spermatogenesis.
534 634 D -> G (in Ref. 3).
11 AA; 70695 MW; 3BCA15217B03BC2A CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Oncorhynchus mykiss (Rainbow trout) (Salmo gairdneri).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              heat-shock-cognate hBc71 gene from rainbow trout."; Biochem. 204:893-900(1992).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        01-AUG-1988 (Rel. 08, Created)
01-AUG-1988 (Rel. 08, Last sequence update)
05-UUL-2004 (Rel. 44, Last annotation update)
Heat shock cognate 70 kDa protein (HSP70).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          651 AA
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MEDLINE=92174952; PubMed=1371753;
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                                                            641 AA; 70695 MW;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          STANDARD;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               PIR; S21175; S21175.
HSSP; P08109; 1CKR.
  ATP-binding;
CONFLICT 6
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                                                                                                                                                    384 KSENVQDLLLLDVTPLSLGIETAGGVMTVLIKRNTTIPTKQTQTFTTYSDNQPGVLIQVY
                                                                                                                                                                                                                           444 EGERAMTKDNNLLGKFELTGIPPAPRGVPQIEVTFDIDANGIMNVSAADKSTGKENKITI
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                                                                                                                            1 KSENVQDLLLLDVAPLSLGLETAGGVMTALIKRNSTIPTKQTQIFTTYSDNQPGVLIQVY
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Gallus gallus (Chicken).
Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
Archosauria; Aves; Neognathae; Galliformes; Phasianidae; Phasianinae;
                                                                                            Gaps
                                                                                            10;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  MEDLINE-98374286; PubMed=9707581; DOI=10.1073/pnas.95.17.9950; MEDLINE-98374286; PubMed=9707581; DOI=10.1073/pnas.95.17.9950; de la Rosa B.J., Vega-Nunez B., Morales A.V., Serna J., Rubio 18 de Pablo F.; "Modulation of the chaperone heat shock cognate 70 by embryonic (prolinaulin correlates with prevention of apoptosis."; Proc. Natl. Acad. Sci. U.S.A. 95.9950-9955 (1998).

- SIMILARITY: Belongs to the heat shock protein 70 family.
                                                   Query Match 82.5%; Score 1084; DB 1; Length 651; Best Local Similarity 79.5%; Pred. No. 6.7e-59; Matches 213; Conservative 21; Mismatches 24; Indels 19
/ -> RT (in Ref. 2).
8701630A0CBC4BE0 CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 HSSP; P19120; JATR.
GO; GO:0005524; F.MP binding; IEA.
GO; GO:0006457; P:protein folding; IEA.
GO; GO:0006986; P:response to unfolded protein; IEA.
InterPro; IPR001022; Hsp70.
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Last sequence update)
Last annotation update)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            646 AA
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PRINTS; PR003014; HBAPTSHOCK70.
ProDom; PD000089; HSP70; 1.
PROSITE; PS00297; HSP70_1; 1.
PROSITE; PS00239; HSP70_2; 1.
PROSITE; PS001036; HSP70_3; 1.
                 651 AA; 71283 MW;
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61 EGERAMTKDINILLGRFELSGIPPAPRGVPQIEVTFDIDANGILNVTATDKSTGKANKITI 120
                                                                                             121 TNDKGRLSKEEIERMVQEAEKYKAEDEVQRERVSAKNALESYAFNMKSAVEDEGLKGKIS 180
                                                                                                                                                            EADKKKVLDKCQEVISWLDANTLAEKDEFEHKRKELEQVCNPIISGLYQGAGG-PG---P 236
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     144 EGERAMTKDNNLLGKFELSGIPPAPRGVPQIEVTFDIDANGILNVSAQDKSTGKQNKITI 203
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 TNDKGRLSKEEIERMVQEAEKYKAEDEVQRERVSAKNALESYAFNMKSAVEDEGLKGKIS 180
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                                                                                                               BGERAMTKDNNLLGKFELTGIPPAPRGVPOIEVTFDIDANGILNVSAVDKSTGKENKITI
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                                                                                                                                                                                                                                                                                                                                                                  01-NOV-1996 (TrEMBLrel. 01, Created)
01-NOV-1996 (TrEMBLrel. 01, Last sequence update)
01-NOV-1996 (TrEMBLrel. 25, Last annotation update)
Heat shock protein 70 (Frament).
Dirofilaria immitis (Canine heartworm).
Eukaryota, Metazoa, Nematoda, Chromadorea, Spirurida, Filarioidea,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Culpepper J.A., Friedman L., Dale B.;
Submitted (AUG-1992) to the EMBL/GenBank/DDBJ databases.
-!- SIMILARITY: Belongs to the heat shock protein 70 family.
EMBL; M95648; AAA28298.1; -.
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        345 AA; 37497 MW; 42963D21A7585F09 CRC64;
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GO; GO:0006457; P:protein folding; IEA.
GO; GO:0006986; P:response to unfolded protein; IEA.
InterPro; IPRO1023; HSP70.
Pfam; PF00012; HSP70; 1.
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80.9%; Pred. No. 1.3e-58;
iive 18; Mismatches 28;
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                                                                                                                                                                                                                          GGF----GAQG---PKGGSGSGPTIEEVD 258
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PROSITE; PS01036; HSP70_3; 1.
ATP-binding; Heat shock.
                                                                                                                                                                                                                                                                                                                                                                                                                                                               Onchocercidae, Dirofilaria.
NCBI_TaxID=6287;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Best Local Similarity 80.99
Matches 212; Conservative
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                                                                                                                                                                             EADKKKVLDKCQEVISWLDANTLAEKDEFEHKRKELEQVCNPIISGLYQGAGG-PG--PG
                                                                                               1 KSENVQDLLLLDVAPLSLGLETAGGVMTALIKRNSTIPTKQTQIPTTYSDNQPGVLIQVY
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                                                                 Gaps
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          05-www.luby (TrEMBLrel. 12, Last sequence update)
05-JUL-2004 (TrEMBLrel. 12, Last sequence update)
Heat shock protein 70 (71kDa heat shock connate protein).
Name-hsp70; Synonyms=HSC71;
Crassostrea gigas (Pacific oyster).
Eukaryota; Metazoa; Mollusca; Bivalvia; Pteriomorphia; Ostreoida;
Ostreoidea; Ostreidae; Crassostrea.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Gourdon I., Gricourt L., Kellner K., Roch P., Escoubas J.-M.; "Characterization of a DNA encoding a 72 kDa heat shock cognate protein (HSC72) from the Pacific oyster, Crassostrea gigas."; DNA Seq. 11:265-270(2000).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Query Match 82.0%; Score 1077; DB 2; Length 659; Best Local Similarity 79.3%; Pred. No. 1.8e-58; Matches 214; Conservative 19; Mismatches 25; Indels 12;
                                                                 .,
2
                               Length 646;
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Submitted (OCT-2003) to the EMBL/GenBank/DDBJ databases.
--- SIMILARITY: Belongs to the heat shock protein 70 family.
EMBL; AR14646; AAD31042.1; --
HSSP; P19120; 3HSC.
GO; GO:0005524; F:ATP binding; IEA.
GO; GO:0006457; P:protein folding; IEA.
GO; GO:0006986; P:response to unfolded protein; IEA.
InterPro; IRR01023; Hsp70.
                                                               Indels
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 2151332ED42C5B9B CRC64;
                              82.1%; Score 1078.5; DB 2;
80.2%; Pred. No. 1.5e-58;
iive 23; Mismatches 24;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                    659 AA
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                                                                                                                                                                                                                                                                                                                                                                                    624 GFPGGGAPPSGGASSGPTIEEVD 646
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MEDLINE=20541285; PubMed=11092738;
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PROSITE; PS00297; HSP70_1; 1.
PROSITE; PS00329; HSP70_2; 1.
PROSITE; PS01036; HSP70_3; 1.
ATP-binding; Heat shock.
SEQUENCE 659 AA; 72042 MW;
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 70826 MW;
                                             al Similarity 80.2
211; Conservative
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 646 AA;
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01-NOV-1999
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SEQUENCE
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                              Query Match
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             BEDKOKILDKCNEVISWINKNQTAEKDEYEHQQKELEKVCNPIITKLYQSAGGMPGGMPE 623
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"Molecular cloning and characterization of a heat shock protein 70-
related cDNA from olive flounder (Paralichthys olivaceus).";
Han-gug Yangsig Hag-hoeji 12:91-100(1999).
-!- SIMILARITY: Belongs to the heat shock protein 70 family.
HSSP; P19120; 1ATR.
                                                                                                                                                                                                           Paralichthys olivaceus (Japanese flounder).

Bukaryota; Metazoa; Chordata; Craniata; Vertebrata; Buteleostomi;
Actinopterygii; Neopterygii; Teleostei; Buteleostei; Neoteleostei;
Acanthomorpha; Acanthopterygii; Percomorpha; Pleuronectiformes;
Pleuronectoidei; Paralichthyidae; Paralichthys.
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25-OCT-2004 (TrEMBLrel. 28, Last sequence update)
25-OCT-2004 (TrEMBLrel. 28, Last annotation update)
Hypothetical protein.
Xenopus laevis (African clawed frog)
Eukaryota, Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Query Match 81.7%; Score 1073.5; DB 2; Length Best Local Similarity 79.0%; Pred. No. 3e-58; Matches 211; Conservative 22; Mismatches 25; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      71115 MW; 6B24E7D409FC76EA CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          GO; GO:0005524; F:ATP binding; IEA.
GO; GO:0006457; P:ptotein folding; IEA.
GO; GO:0006986; P:response to unfolded protein; IEA.
InterPro; IPR001023; Hsp70.
                                                                                                                            Last sequence update)
Last annotation update)
                                                             650 AA
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                                                                                                     Created)
                                                             PRT;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Pfam; PP00012; HSP70; 1. PRINTS; PR00301; HBATSHOCK70. ProDom; PD000089; HBP70; 1. PROSITE; PS00297; HSP70 1; 1. PROSITE; PS00329; HSP70 2; 1. PROSITE; PS01036; HSP70 2; 1. PROSITE; PS01036; HSP70 3; 1. ATP-binding; Heat shock.
                                                                                                   01-AUG-1998 (TrEMBLrel. 07,
01-NOV-1998 (TrEMBLrel. 08,
01-MAR-2004 (TrEMBLrel. 26,
Heat shock protein 70.
                                                          PRELIMINARY;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      650 AA;
                                                                                                                                                                                                                                                                                                                   NCBI_TaxID=8255;
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Attached 2477932; DOI=10.1073/pnas.242603899;

Strausberg R.L., Feingold E.A., Grouse L.H., Derge J.G.,

Radianner C.M., Schuler G.D.,

A Altschul S.F., Zeeberg B., Buetow K.H., Schaefer C.F., Bhat N.K.,

A Altschul S.F., Zeeberg B., Buetow K.H., Schaefer C.F., Bhat N.K.,

A Altschul S.F., Zeeberg B., Buetow K.H., Schaefer C.F., Bhat N.K.,

A Altschul S.F., Zeeberg B., Buetow K.H., Schaefer C.F., Bhat N.K.,

A Bratchenko L., Marusina K., Farmer A.A., Rubin G.M., Hong L.,

Brownstein M.J., Usdin T.B., Tooshlyuki S., Carninci P., Frange C.,

Raha S.S., Loquellano N.A., Perers G.J., Abramson R.D., Mullahy S.J.,

Bosak S.A., McKwam P.J., McKernan R.J., Malek J.A., Gunaratne P.H.,

A Richards S., Worley K.C., Hale S., Garcia A.M., Gay L.J., Hulyk S.W.,

A Nilalon D.K., Muzny D.M., Sodergren E.J., Lu X., Gibbs R.A.,

Rahe J., Helton B., Ketreman M., Madan A., Young A.C., Shevchenko Y., Boulfard G.G.,

Whiting M., Madan A., Young A.C., Shevchenko Y., Boulfard G.G.,

Blakesley R.W., Touchman J.W., Green E.D., Dickson M.C.,

Rodriguez A.C., Grimwood J., Schmutz J., Myers R.M., Butterfield Y.S.,

A Dones S.J., Marra M.A.,

Jones S.J., Marra M.A.,

R. Generation and initial analysis of more than 15,000 full-length human
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                                                                                                                                                                                                           MEDLINE=22341132; PubMed=12454917; DOI=10.1002/dvdy.10174;
Klein S.L., Strausberg R.L., Wagner L., Pontius J., Clifton S.W.,
Richardson P.;
                                                                                                                                                                                                                                                                                                                        "Genetic and genomic tools for Xenopus research: The NIH Xenopus
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                11;
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Amphibia; Batrachia; Anura; Mesobatrachia; Pipoidea; Pipidae;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Klein S., Strausberg R.; Submitted (JUL-2004) to the EMBL/GenBank/DDBJ databases.
Submitted (JUL-2004) to the Heat shock protein 70 family.
-!- SIMILARITY: Belongs to the heat shock protein 70 family.
EMBL; EC077998; AAH77998.1; -.
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77.3%; Pred. No. 3e-58;
:ive 25; Mismatches 25; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   PRINTS; PRO0301; HEATSHCK70.
PRODOM; PD000089; HSp70; 1.
PROSITE; PS00297; HSP70 1; 1.
PROSITE; PS01036; HSP70 2; 1.
ATP-binding; Hypothetical protein.
SEQUENCE 652 AA; 71379 MW; F5B8A6ABCF1FDCBA CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Proc. Natl. Acad. Sci. U.S.A. 99:16899-16903 (2002)
                                                                                                                                                                                                                                                                                                                                                                                                Dev. Dyn. 225:384-391(2002)
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Matches 208; Conservative
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                                     Xenopodinae; Xenopus.
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                                                                                                                                   SEQUENCE FROM N.A.
                                                            NCBI_TaxID=8355;
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Q6PH56
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      444
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   EGERAMTKDNNLLGRFELSGIPPAPRGVPQIEVTFDIDANGILNVTATDKSTGKANKITI 120
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       TNDKGRLSKEEIERMVQEAEKYKAEDEVQRERVSAKNALESYAFNWKSAVEDEGLKGKIS 180
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             EADKKKVLDKCQEVISWLDANTLAEKDEFEHKRKELEQVCNPIISGLYQGAGG-----PG 235
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1 KSENVODLILLDVAPLSLGLETAGGVMTALIKRNSTIPTKQTQIFTTYSDNQPGVLIQVY
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        385 KSEEVQDLLLLDVTPLSLGIETAGGVMTTLIKRNTTIPTKQTQTFTTYSDNQPGVLIQVY
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Gaps
                                                                                                                                                                                                                                                                                                                                                                                                         A QIN W. Y. Yehenko M.G., Wu B.S., Walker V.K., Robertson M.R.; Submitted (NOV-2002) to the EMBL/GenBank/DDBJ databases.

-1 Submitted (NOV-2002) to the EMBL/GenBank/DDBJ databases.
-1 SIMILARITY: Belongs to the heat shock protein 70 family. Rembl., RAY179898; AAO21473.1; -. RSP; P19120; JHSC.
R GO; GO: 0000554; F.ATP binding; IEA.
R InterPo: IPR001023; HSP70.
R ProDom; PF00012; HSP70.
R ProDom; PD000089; HSP70.
R PROSITE; PS00039; HSP70.; 1.
R PROSITE; PS00329; HSP70.; 1.
R PROSITE; PS00329; HSP70.; 1.
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                                                                                                                                                     05-JUL-2004 (TrEMBLrel. 27, Created)
05-JUL-2004 (TrEMBLrel. 27, Last sequence update)
05-JUL-2004 (TrEMBLrel. 27, Last annotation update)
Heat shock protein 70.
Locusta migratoria (Migratory locust).
Eukaryota; Metazoa; Arthropoda; Hexapoda; Insecta; Pterygota; Neoptera; Orthopteroidea; Orthopteroidea; Actidomorpha;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         81.4%; Score 1070; DB 2; Length 654; 78.5%; Pred. No. 5e-58; Live 19; Mismatches 27; Indels 1;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               654
71408 MW; 3389F746D03B2F4B CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           654
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      655 AA
                        624 PGGMPGGFPGAGAGAGGGSSGPTIEEVD 652
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         GFPGGFPGAGGAAGGAGGAGGTIEEVD
----PGGF--GAQGPKGGSGSGPTIEEVD
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Conservative
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tes 212; Conserv
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ATP-binding.
NON TER
SEQUENCE 6
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                236
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           625
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Q6WAW3
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Matches
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61 EGERAMTKONNLLGRFELSGIPPAPRGVPQIEVTFDIDANGILNVTATDKSTGKANKITI
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MEDLINE=22380257; PubMed=12477932; DOI=10.1073/pnas.242603899;
Strausberg R.L., Feingold E.A., Grouse L.H., Derge J.G.,
Klausner R.D., Collins P.S., Wagner L., Shenmen C.M., Schuler G.D.,
Altschul S.F., Zeeberg B., Bustova K.H., Schaefer C.F., Bhat N.K.,
Hopkins R.F., Jordan H., Moore T., Max S.I., Wang J., Hsieh F.,
Diatchenko L., Marusina K., Farmer A.A., Rubin G.M., Hong L.,
Stapleron M., Soares M.B., Bonaldo M.F., Casavant T.L., Scheetz T.E.,
Brownstein M.J., Usdin T.B., Toshiyuki S., Carninci P., Prange C.,
Raha S.S., Loquellano N.A., Peters G.J., Abramson R.D., Mullahy S.J.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Bukaryota; Metazoa; Chordata; (vanio rerio).
Actinopterygii; Meopterygii; Teleostei; Ostariophysi; Cypriniformes; Cyprinidae; Danio.
NCBI_TaxID=7955;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    12;
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                                                                            SEQUENCE FROM N.A.

Wang X.H., Chen B., Kang L.;

Submitted (OCT-2003) to the EMBL/GenBank/DDBJ databases.

-1- SIMILARITY: Belongs to the heat shock protein 70 family.

EMBL; AY299637; AAPS7537.3; -.

HSSP; P19120; LATR.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            DB 2; Length 655;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 27; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       71481 MW; 42B2D2812F239651 CRC64;
                                                                                                                                                                                                                                         GO; GO: 0005524; F:ATP binding; IEA.
GO; GO:0006457; P:protein folding; IEA.
GO; GO:0006986; P:response to unfolded protein; IEA.
InterPro; IPR001023; Hsp70.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Created)
Last sequence update)
Last annotation update)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      81.4%; Score 1070; DB 278.5%; Pred. No. 5e-58; ive 19; Mismatches 2
Acridoidea; Acrididae; Oedipodinae; Locusta.
NCBI_TaxID=7004;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 --PGGF----GAQGPKGGSGSGPTIEEVD 258
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                                                                                                                                                                                                                                                                                                                                                               Pfam; PF00012; HSP70; 1.
PRINTS; PR00301; HRATSHOCK70.
ProDom; PR00301; HRATSHOCK70.
PROSITE; PS00297; HSP70 1; 1.
PROSITE; PS00329; HSP70 2; 1.
ATP-binding; Heat shock.
SEQUENCE 655 AA; 71481 MW;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      05-JUL-2004 (TrEMBLrel. 27, 05-JUL-2004 (TrEMBLrel. 27, 05-JUL-2004 (TrEMBLrel. 27,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Best Local Similarity 78.59
Matches 212; Conservative
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565

625

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445

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05-JUL-2004
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                                                                                                                                                          SEQUENCE
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   SERVE
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              182 ADKKKVLDKCQEVISWLDANTLAEKDEFEHKRKELEQVCNPIISGLYQGAGGPGPGFGA 241
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      624
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               NDKGRLSKEEIERMVQEAEKYKAEDEVQRERVSAKNALESYAFNMKSAVEDEGLKGKISE 181
                                                                                                                                                                                                                                                                                                                                                                                                                                     61
Bosak S.A., McEwan P.J., McKernan K.J., Malek J.A., Gunaratne P.H., Richards S., Worley K.C., Hale S., Garcia A.M., Gay L.J., Hulyk S.W., Villalon D.K., Murny D.M., Sodergren B.J., Lu X., Gibbs R.A., Fahey J., Helton E., Ketteman M., Madan A., Rodrigues S., Sanchez A., Whiting M., Madan A.C., Shevchenko Y., Bouffard G.G., Blakesley R.W., Touchman J.W., Green E.D., Dickson M.C., Krzywinski M.I., Skalska U., Schmutz J., Myers R.M., Butterfield Y.S., Jones S.J., Marra M.A.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              447 GERAMTKDNNLLGKFELTGIPPAPRGVPQIEVTFDIDANGILNVSAADKSTGKQNKITIT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             507 NDKGRLSKEEIERWVQEADKYKAEDDLQREKISAKNSLESYAFNWKNSVEDDNLKGKISE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            SENVQDLLLLDVAPLSLGLETAGGVMTALIKRNSTIPTKQTQIFTTYSDNQPGVLIQVYE
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Bukaryota, Metazoa, Mollusca, Bivalvia, Pteriomorphia, Ostreoida,
                                                                                                                                                                                                                                                                                                                                                                                                             4;
                                                                                                                                                                          Strausberg R.;
Submitted (AUG-2003) to the EMBL/GenBank/DDBJ databases.
-!- SIMILARITY: Belongs to the heat shock protein 70 family.
EMBL; BCO56709; AMF6709.1; -.
HSSP; P19120; 1ATR.
                                                                                                                                                                                                                                                                                                                                                                                    Query Match 81.4%; Score 1069; DB 2; Length 643; Best Local Similarity 80.3%; Pred. No. 5.6e-58; Matches 208; Conservative 26; Mismatches 21; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Zhang Q.-Z., Wu X.-Z., Pan J.-P., Gao J.-S., Zhang G.;
Submitted (OCT-2002) to the EMBL/GenBank/DDBJ databases.
                                                                                                                                                                                                                                                                                                                                                              643 AA; 70469 MW; EBC67C8CAD366161 CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Created)
Last sequence update)
Last annotation update)
                                                                                                                     and mouse cDNA sequences.";
Proc. Natl. Acad. Sci. U.S.A. 99:16899-16903(2002)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               658 AA
                                                                                                                                                                                                                                      ZETN; ZDB-GENE-990415-91; hsp70.
GO; GO:000554; F.ATP binding; IEA.
Interpro; IPRO1023; Hsp70.
Fan; PRO012; HSP70; 1.
PRINTS; PR0301; HEATSHOCK70.
PROSITE; PS00297; HSP70 1.
PROSITE; PS00297; HSP70 1.
PROSITE; PS0139; HSP70 2; 1.
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NCBI_TaxID=94323;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     OARGASGASAQGPTIEEVD 643
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    01-0CT-2003 (TrEMBLrel. 25, 01-0CT-2003 (TrEMBLrel. 25, 01-MAR-2004 (TrEMBLrel. 26, Heat shock protein 70.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               PRELIMINARY;
                                                                                                                                                                                                                             P19120, 1ATR.
                                                                                                                                                         SEQUENCE PROM N.A.
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                                                                                                                                                                    TISSUE=Embryo;
                                                                                                                                                                                                                                                                                                                                     PROSITE, PSO
ATP-binding
                                                                                                                                                                                                                                                                                                                                                              SEQUENCE
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180
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    448
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           389 KSEEVQDLLLLDVTPLSLGIETAGGVMTNLIKRNTTIPTKQTQTFTTYSDNQPGVLIQVY
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             509 TNDKGRLSKOBIDRMVNEAEKYKQEDEKQRERIAAKSGLESYAFNMKSTVDDEKLKDKIS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         EADKKKVLDKCQEVISWLDANTLAEKDEFEHKRKELEQVCNPIISGLYQGAGG-PG---P
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        BGDKKTILDKCEBIIKWMDQNQLADKEBFEHKQKELEGVCNPIITKLYQASGGAPGGGMP
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1 KSENVODLLLLDVAPLSLGLETAGGVMTALIKRNSTIPTKQTQIFTTYSDNQPGVLIQVY
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Bukaryota, Metazoa, Arthropoda, Hexapoda, Insecta, Pterygota,
Neoptera; Endopterygota; Hymenoptera; Apocrita; Aculeata; Apoidea,
Megachilidae; Megachilinae; Megachile.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 12;
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Submitted (FRB-2004) to the EMBL/GenBank/DDBJ databases.
-!- SIMILARITY: Belongs to the heat shock protein 70 family.
EMBL; AVS50115; AAS57864.1; -.
HSSP; P19120; 1ATR.
-i- SIMILARITY: Belongs to the heat shock protein 70 family. EMBL; AX172024; AAO41703.1; -. HSSP; P19120; LATR. GO; GO:0005524; F:ATP binding; IEA. GO; GO:0006457; P:protein folding; IEA. GO; GO:000696; P:response to unfolded protein; IEA. InterPro; IPR011023; Hsp70.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Indels
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GO; GO:0006457; P:Protein folding; IEA.
GO; GO:0006457; P:response to unfolded protein; IEA.
GO; GO:0006986; P:response to unfolded protein; IEA.
InterPro; IRR010123; Hgp70.
PRINTS; PR001012; HSP70. 1.
PROSITE; PS000329; HSP70. 1.
PROSITE; PS01036; HSP70. 2; I.
PROSITE; PS01036; HSP70. 2; I.
PROSITE; PS01036; HSP70. 2; I.
ATP-binding; Heat shock.
NON TER 1
SEQÜENCE 490 AA; 53882 MW; 09D26F0F038CEDBD CRC64;
                                                                                                                                                                                                                                                                                                                                                                                               658 AA; 71933 MW; 39CIDEF29A71F0E1 CRC64;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                   81.2%; Score 1067; DB 2; 78.5%; Pred. No. 7.7e-58; ive 20; Mismatches 26;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Megachile rotundata (alfalfa leafcutting bee)
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05-JUL-2004 (TrEMBLrel. 27, Last ann
70 kDa heat shock protein (Fragment)
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                                                                                                                                                                                                        Pfam; PF00012; HSP70; 1.
Probom; PD000089; HsP70; 1.
PROSITE; PS00297; HSP70_1; 1.
PROSITE; PS00329; HSP70_2; 1.
PROSITE; PS01036; HSP70_3; 1.
ATP-binding; Heat shock.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Best Local Similarity 78.5
Matches 212; Conservative
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GO:0005524; F:ATP binding; IEA
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                                                                                     Query Match
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                                                                     EGERAMTKDNNLLGRFELSGIPPAPRGVPQIEVTFDIDANGILNVTATDKSTGKANKITI 120
                                                                                                    TNDKGRLSKEEIERMVQEAEKYKAEDEVQRERVSAKNALESYAFNMKSAVEDEGLKGKIS 180
                                                                                                             TYDKGRLSKEDIERMYNEAERYRNEDEQQRERISAKNTLESYCFNMKSTWEDEKVKDKID 412
                                                                                                                                    EADKKKVLDKCQEVISWLDANTLAEKDEFEHKRKELEQVCNPIISGLYQGAGGPGGFG 240
                                                                                                                                            233 KSEAVQDLLLLDVTPLSLGIETAGGVMTTLIKRNTTIPTKQTQTFTTYSDNQPGVLIQVY
                                      1 KSENVQDLLLLDVAPLSLGLETAGGVMTALIKRNSTIPTKQTQIFTTYSDNQPGVLIQVY
                                                                             Gaps
                                                                                                                                                                                                                                                                                    Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
Actinopterygii; Neopterygii; Teleostei; Ostariophysi; Cypriniformes;
Cyprinidae; Danio.
                       ö
        Length 490;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      submitted (AUG-2003) to the EMBL/GenBank/DDBJ databases.
-- SIMILARITY: Belongs to the heat shock protein 70 family.
EMBL; BCO5797; AAR56797.1; --
HSSP; P19120; LARY
ZPIN; ZDB-GENR-^^-
                       32; Indels
                                                                                                                                                                                                                                     05-JUL-2004 (TrEMBLrel. 27, Created)
05-JUL-2004 (TrEMBLrel. 27, Last sequence update)
05-JUL-2004 (TrEMBLrel. 27, Last annotation update)
Hypothetical protein zgc:63663.
ORFNames=zgc:63663;
Brachydanio rerio (Zebrafish) (Danio rerio).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Proc. Natl. Acad. Sci. U.S.A. 99:16899-16903 (2002)
       81.1%; Score 1066; DB 2; 79.5%; Pred. No. 6.2e-58; ive 21; Mismatches 32;
                                                                                                                                                                                                                        PRT;
                                                                                                                                                                                473 GSAPGGGAGGGPTIEEVD 490
                                                                                                                                                                 241 AQGPKGGSGSGPTIEEVD 258
    Query Match
Best Local Similarity 79.5
Matches 205; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             and mouse cDNA sequences.
                                                                                                                                                                                                                        PRELIMINARY;
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TISSUE=Whole body;
Strausberg R.;
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                                                                                                                                                                                                                                                                                                           NCBI_TaxID=7955;
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SENVQDILILIDVTPLSIGIETAGGVMTVLIKRNTTIPTKQTQTFTTYSDNQPGVLIQVXE 444
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       565 EDKKTITDKCNEVISWIDKNQTAEKDEYEHQQKELEKYCNPIITKLYQGAGGMPGGMPGG 624
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               GERAMIKDNNLLGRFELSGIPPAPRGVPQIEVTFDIDANGILNVTATDKSTGKANKITIT 121
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                                                                                                                                                                                                                                                                                                                                                                                                                           2 SENVODLLLLDVAPLSLGLETAGGVMTALIKRNSTIPTKQTQIFTTYSDNQPGVLIQVYE
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Neoptera; Endopterygota; Hymenoptera; Apocrita; Ichneumonoidea;
Braconidae; Microgastrinae; Cotesia.
                                                                                                                                                                                                                                                                                                                                                               10;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   MEDLINE=22578532; PubMed=12692281; DOI=10.1099/vir.0.19026-0; Asgart S., Zhang G., Schmidt O.; Polydnavirus particle proteins with similarities to moleculas chaperones, heat-shock protein 70 and calreticulin."; J. Gen. Vir.01. 84:1165-1171(2003).

-i. SIMILARITY: Belongs to the heat shock protein 70 family. EMBL; AYIS0371; AAN73310.1;
                                                                                                                                                                                                                                                                                                       Length 647;
                                                                                                                                                                                                                                                                                                                                                               Indels
                                                                                 Probon, PD000089; Hep70; 1.

PROSITE; PS02297; HSP70 1; 1.

PROSITE; PS01329; HSP70 2; 1.

PROSITE; PS0134; HSP70 3; 1.

ATP-binding; Hypothetical protein.

SEQUENCE 647 AA; 70946 MW; 2D956FBSF0FC6D65 CRC64;
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Last annotation update)
                                                                                                                                                                                                                                                                                                81.1%; Score 1066; DB 2;
80.0%; Pred. No. 8.6e-58;
tive 21; Mismatches 22;
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PROSITE; PS01036; HSP70-3; 1.
PROSITE; PS00639; THIOL_PROTEASE_HIS; UNKNOWN_1.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  236 -PGGF-GAQGPKGGSGSGPTIEEVD 258
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InterPro; IPR001023; Hsp70.
InterPro; IPR001059; Pept_cys_acsite.
Pfam; PF00012; HSP70; 1.
PRINTS; PR00301; HEATSHOCK70.
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Interpro; IPR001023; Hsp70.
Pfam; PF00012; HSP70; 1.
PRINTS; PR00301; HEATSHOCK70.
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01-MAR-2003 (TrEMBLrel. 23,
01-MAR-2004 (TrEMBLrel. 26,
                                                                                                                                                                                                                                                                                                                                   Best Local Similarity 80.0%
Matches 212; Conservative
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Cotesia rubecula.
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ATP-binding; Heat shock.
SRQUENCE 634 AA; 69913 MW; ABSCDCC13D1340C8 CRC64;
                                           Best Local Similarity 79.5%
Matches 205; Conservative
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                                                                                                                                                                                                                                                                                                                                                                                     Heat shock protein 70.
Wuchereria bancrofti.
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                                 Query Match
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          EADKKKVLDKCQEVISWLDANTLAEKDEFEHKRKELEQVCNPIISGLYQGAGG-----
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01-OCT-2003 (TrEMBLrel. 25, Last sequence update)
05-JUL-2004 (TrEMBLrel. 27, Last annotation update)
65-JUL-2004 (TrEMBLrel. 27, Last annotation update)
Heat shock protein 70 (Heat shock protein Hsp70).
Name-HSP70; Synonyms-hsp70;
Gallus gallus (Chicken).
Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Buteleostomi;
Archosauria; Aves; Neognathae; Galliformes; Phasianidae;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Mazzi C.M., Ferro J.A., Ferro M.I.T., Miretti M.M., Givisiez P.B.N., Giachetto P.F., Macari M.;
Submitted (AUG-2002) to the EMBL/GenBank/DDBJ databases.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Mazzi C.M., Ferro J.A., Ferro M.I.T., Macari M., Furlan L.R., Submitted (AUG-2002) to the EMBL/GenBank/DDBJ databases.
-!- SIMILARITY: Belongs to the heat shock protein 70 family.
EMBL; AY288298; AAP77959.1; -.
                                                                                                                                                                                                                                                                                                                                                                                                                     Du H. Jr., Zhang X.;
Submitted (APR-2003) to the EMBL/GenBank/DDBJ databases
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Submitted (AUG-2002) to the EMBL/GenBank/DDBJ databases
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GO, GO:0006457; P:protein folding; IEA.
GO, GO:0006486; P:response to unfolded protein; IEA.
GO, GO:0006986; P:response to unfolded protein; IEA.
InterPro. IPRO1023; Hsp70.
Pram; PF00012; HSP70; 1.
PROSITE; PS002297; HSP70. 1; 1.
PROSITE; PS002297; HSP70. 1; 1.
PROSITE; PS003297; HSP70. 2; 1.
                                                                                                                                                                                     234 -----PG--PGGFGAQGPKGGSGSGPTIEEVD 258
                                                                                                                                                                                                  634 AA
                                                                                                                                                                                                                                                                PRT;
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                                                                                                                                                                                                                                                                PRELIMINARY;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 HSSP, P19120, 1ATR.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             SEQUENCE FROM N.A.
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                                                                                                                                                                                                                                                                                                                                                                           Gallus.
NCBI_TaxID=9031;
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                                                                                                                                                          387 KSENVQDLLLLDVTPLSLGIETAGGVMTALIKRNTTIPTKQTQTFTTYSDNQSSVLVQVY
                                                                                                                                                                                                                                                                             PubMed=15013783; DOI=10.1016/j.exppara.2004.01.001;
Ravi V., Kubofcik J., Bandopathyaya S., Geetha M., Narayanan R.B.,
Ravi V., Kubofcik J., Bandopathyaya S., Geetha M., Narayanan R.B.,
Nutman T.B., Kaliraf P.,
Muchereria bancorfel: cloning and characterization of heat shock
T. Forcein 70 from the human lymphatic filarial parasite.";
Exp. Parasitol. 106:1-10(2004).
[2]
PSQUENCE FROM N.A.
PAGENET FROM N.A.
Raliraj P., Kunthala J., Nutman T.;
Submitted (MAR-2000) to the EMBL/GenBank/DDBJ databases.
[3]
Submitted (MAR-2000) to the heat shock protein 70 family.
[4]
RMSP; P19120; 3HSC.
RMSP; P19120; 3HSC.
RMSP; P19120; 3HSC.
RMSP; P19120; Protein folding; IEA.
RO; GO:0006457; P:protein folding; IEA.
RMSP; P19120; Protein folding; IEA.
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                                                                                                                        1 KSENVQDLLLLDVAPLSLGLETAGGVMTALIKRNSTIPTKQTQIFTTYSDNQPGVLIQVY
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                                                                    Gaps
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Onchocercidae, Wuchereria.
                                                                10;
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      DB 2; Length 634;
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                                                                Indele
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Created)
Last sequence update)
Last annotation update)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Query Match 81.0%; Score 1064; DB 2; Best Local Similarity 79.8%; Pred. No. 1.1e-57; Matches 209; Conservative 21; Mismatches 28;
81.0%; Score 1064; DB 2; 79.5%; Pred. No. 1.1e-57; ive 23; Mismatches 20
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        241 AQGPKGGSGSGPTIEEVD 258
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ------GPTIEEVD 634
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               InterPro; IPR001023; Hsp70.
Pfam; PP00012; Hsp70; 1.
PRINTS; PR00301; HEATGHOCK70.
PROSITE; PS00297; HSP70_1; 1.
PROSITE; PS01039; HSP70_2; 1.
PROSITE; PS01036; HSP70_2; 1.
ATP-binding; Heat shock.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         01-OCT-2000 (TrEMBLrel. 15, 01-OCT-2000 (TrEMBLrel. 15, 01-MAR-2004 (TrEMBLrel. 26,
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EADKKKVLDKCQEVISWLDANTLAEKDEFEHKRKELEQVCNPIISGLYQGAGG--PG--P 236
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         121 INDKGRLSKEBIERMVQEAEKYKAEDEVQRERVSAKNALESYAFNMKSAVEDEGLKGKIS 180
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  504 INDKGRLSKÆBIBRAVQDAÆKYKADDEKQRDRISAKNSLESYCFNAKSTVEDEKFKÆKIS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           61 EGERAMTKDNNLLGRFELSGIPPAPRGVPQIEVTFDIDANGILNVTATDKSTGKANKITI
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       444 EGERAMTKDNNLLGKFELSGIPPAPRGVPQIEVTFDIDANGILNVSAVDKSTGKENKITI
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1 KSENVQDLLLLDVAPLSLGLETAGGVMTALIKRNSTIPTKQTQIFTTYSDNQPGVLIQVY
                                                                                                                                                                                                                                                               Heat shock protein 70.

Penaeus vannamei (Penoeid shrimp) (European white shrimp).

Eukaryota, Metazoa; Arthropoda; Crustacea; Malacostraca;

Eumalacostraca; Eucarida; Decapoda; Dendrobranchiata; Penaeoidea;

Penaeidae; Litopenaeus.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              80.9%; Score 1063.5; DB 2; Length 652;
                                                                                                                                                                                                                                                                                                                                                                                                  Submitted (JUN-2004) to the EMBL/GenBank/DDBJ databases.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              30; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                              EMBL; NY645906; AAT46566.1; -.

GO; GO:0006452; F:ATP binding; IEA.

GO; GO:0006457; P:Protrain folding; IEA.

GO; GO:0006646; P:Presponse to unfolded protein; IEA.

InterPro; IPR001023; Hsp70.

Pfam; PR00012; Hsp70. 1.

PRINTS; PR00301; Hsp70; 1.

PROSITE; PS00297; HSP70; 1.

PROSITE; PS00329; HSP70. 2; 1.

PROSITE; PS00329; HSP70. 2; 1.

PROSITE; PS0036; HSP70. 3; 1.

ATP-binding; Heat shock.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   71522 MW; 956F88CD06C04AE4 CRC64;
                                                                                                                                                                                                                 05-JUL-2004 (TrEMBLrel. 27, Created)
05-JUL-2004 (TrEMBLrel. 27, Last sequence update)
05-JUL-2004 (TrEMBLrel. 27, Last annotation update)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Created)
Last sequence update)
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18; Mismatches 3
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             652 AA
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                                                                                                623 VPGGFPGAGAAPAGGGSSSGPTIEEVD 649
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  GGFPGGAPGAGGAAPGAGGSSGPTIEEVD
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Q71XW5
Q71XW5;
05-JUL-2004 (TrEMBLrel. 27,
05-JUL-2004 (TrEMBLrel. 27,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                78.18;
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Matches 210; Conservative
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SEQUENCE FROM N.A.
                                                                               236
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                                                                               503
                                                                                                            TNDKGRLSKEETERWYQEAEKYKAEDEVQRERVSAKNALESYAFNWKSAVEDEGLKGKIS 180
                                                                                                                                                                      EADKKKVLDKCQEVISWLDANTLAEKDEFEHKRKELEQVCNPIISGLYQGAGG-PG--PG 237
                                                                                                                                                                                                    623
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       384 KSENVQDLLLDVTPLYLGIETAGGVMTVLIKRNTTIPTKQTQTFTTYSDNQPGVLIQVY 443
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  EGERAMTKONNLLGRFELSGIPPAPRGVPQIEVTFDIDANGILNVTATDKSTGKANKITI 120
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    SEQUENCE FROM N.A.
MEDLINE=98059927; PubMed=9397538;
DOI=10.1002/(SICI)1520-6408(1997)21:3<223::AID-DVG5>3.3.CO;2-5;
DOI=10.1002/(SICI)1520-6408(1997)21:3<223::AID-DVG5>3.3.CO;2-5;
Santacruz H., Vriz S., Angelier N.;
"Molecular characterization of a heat shock cognate cDNA of zebrafish, h8c70, and developmental expression of the corresponding
                                                                     504 TNDKGRLSKDEIERMVQEAEKYKADDEAQKDRIAAKNALESYAFNMKQTIEDEKFKDKIS
                                                                                                                                                                                      EGERAMTKDNNLLGRFELSGIPPAPRGVPQIEVTFDIDANGILNVTATDKSTGKANKITI
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                                                                                                                                                                                                                                                                                                                                                                                                              HSC70 protein.

Name-hapa8, Synonyms=hac70,

Name-hapa8, Synonyms=hac70,

Evachydanio rerio (Zebrafish) (Danio rerio).

Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;

Actinopterygii; Neopterygii; Teleostei; Ostariophysi; Cypriniformes;

Cyprinidae; Danio.

NCBI_TaxID=7955;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             transcripts.";
Dev. Genet. 21:223-233(1997).
Dev. Genet. 21:223-233(1997).
EMBL, YILARITY: Belongs to the heat shock protein 70 family.
EMBL, YIL413; CAA72216.1, -.
HSSP; P19120; 3HSC.
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Last annotation update)
                                                                                                                                                                                                                                                                                                                                          649 AA
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GO; GO:0005524; F:ATP binding; IEA.
INECTPO: J RRO01023; Hsp70.
PEAM; PRO012; HSP70; 1.
PRINTS; PR00301, HEATSHOCK70.
ProDom; PD000089; Hsp70; 1.
PROSITE; PS00297; HSP70_1; 1.
PROSITE; PS0129; HSP70_2; 1.
ATP-binding.
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                                                                                                                                                                                                                                                               624 GMPSGAPGAGSTGGGPTIEEVD 645
                                                                                                                                                                                                                                                                                                                                          PRT;
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01-MAY-1997 (TrEMBLrel. 03,
01-MAR-2004 (TrEMBLrel. 26,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Conservative
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                   384
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Eukaryota, Metazoa, Nematoda, Chromadorea, Spirurida, Filarioidea,
Onchocercidae, Brugia.
05-JUL-2004 (TrEMBLrel. 27, Last annotation update)
Heat shock protein 70.
Penaeus monodon (Penoeid shrimp).
Bukaryota; Metazoa; Arthropoda; Crustacea; Malacostraca;
Eumalacostraca; Eucarida; Decapoda; Dendrobranchiata; Penaeoidea;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   11;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           DB 2; Length 652;
                                                                                                                                                                     SEQUENCE FROM N.A.
LO W.Y., SONG Y.-L.;
Submitted (JAN-2002) to the EMBL/GenBank/DDBJ databases.
-!- SIMILARITY: Belongs to the heat shock protein 70 family.
EMBL; AP474375; AAQ05768.1; -.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                J. Immunol. 143:299-308(1989).
-!- SIMILARITY: Belongs to the heat shock protein 70 family.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            MEDLINE-89278663; PubMed=2659668;
Sekixik M.B., Denham D.A., Partono F., Maizels R.M.;
"Heat shock cognate 70 is a prominent immunogen in Brugian
filariasis.";
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   30; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 71481 MW; FDFADA929ECF6413 CRC64;
                                                                                                                                                                                                                                                                                               GO; GO:0005524; F:APP binding; IEA.
GO; GO:0006457; P:protein folding; IEA.
GO; GO:0006986; P:response to unfolded protein; IEA.
InterPro; IPR001023; Hsp70.
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01-NOV-1996 (TrEMBLrel. 01, Last sequence update)
10-CCT-2003 (TrEMBLrel. 25, Last annotation update)
Heat shock protein 70, hsp70A2 (Fragment).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    80.9%; Score 1063.5; DB 78.1%; Pred. No. 1.2e-57 ive 18; Mismatches 3
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                                                                                                                                                                                                                                                                                                                                                                                                                                   ProDom; PD000089; Hsp70; 1.
PROSITE; PS00297; HSP70 1; 1.
PROSITE; PS00329; HSP70 2; 1.
PROSITE; PS01036; HSP70 3; 1.
ATP-binding; Heat shock.
                                                                                                                                                                                                                                                                                                                                                                                         Pfam; PF00012; HSP70; 1.
PRINTS; PR00301; HEATSHOCK70.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Matches 210; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                PRELIMINARY;
                                                                                                                                                                                                                                                                                    HSSP; P19120; 1BA1.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 652 AA;
                                                                                                           Penaeidae, Penaeus
NCBI_TaxID=6687;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Local Similarity
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              SEQUENCE
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This SWISS-PROT entry is copyright. It is produced through a collaboration
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                74 KSEAVQDLLLLDVAPLSLGIETAGGVMTALIKRNTTIPTKTSQTFTTYSDNQPGVLIQVY 133
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       EGERAMTKDNNLLGRFELSGIPPAPRGVPQIEVTFDIDANGILNVTATDKSTGKANKITI 120
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             EADKKKVLDKCQEVISWLDANTLAEKDEFEHKRKELEQVCNPIISGLYQGAGG-PG--PG 237
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      194 TNDKGRLSKOEIERMVQEAEKYKADDEAQKDRIAAKNALESYAFNMKQTIEDEKLKDKIS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               1 KSENVQDLLLLDVAPLSLGLETAGGVMTALIKRNSTIPTKQTQIFTTYSDNQPGVLIQVY
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"Characterization of an hsp70 gene from the human filarial parasite,
Brugia malayi (Nematoda).";
Mol. Biochem. Parasitol. 49:229-238(1991).
-!- SIMILARITY: Belongs to the heat shock protein 70 family.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  SEQUENCE FROM N.A.
MEDLINE=92131059; PubMed=1775166; DOI=10.1016/0166-6851(91)90066-F;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Brugia malayi (Filarial nematode worm).
Bukaryota; Metazoa; Nematoda; Chromadorea; Spirurida; Filarioidea;
Onchocercidae; Brugia.
NCBI_TaxID=6279;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     4
                                                                                                                                                                                                                                                                                                                                                                                                                                        Length 335;
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                                                                                                                                                                                                                                                                                                                                                                          335 AA; 36241 MW; B4717A8B99D80C0B CRC64;
                                                                                GO; GO:005524; F:Arp binding; IEA.
GO; GO:0005524; F:Arp binding; IEA.
GO; GO:000696; P:response to unfolded protein; IEA.
GO; GO:000596; P:response to unfolded protein; IEA.
DEAM; PF00012; HSP70.
PRINTS; PR00031; HSP70.
PROSITE; PS01036; HSP70.
ATP-binding; Heat shock.
                                                                                                                                                                                                                                                                                                                                                                                                                                    80.9%; Score 1063; DB 2; 79.8%; Pred. No. 6.1e-58;
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HSSP; P19120; 3HSC.
InterPro; IPR001023; Hsp70.
EMBL; M27191; AAA27857.1;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Heat shock 70 kDa protein.
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05-JUL-2004
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P27541;
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TISSUE-Brain, and Eye;

MEDLINE-22388257; PubMed=12477932; DOI=10.1073/pnas.242603899;

Atlausner R.D., Collins F.S., Wagner L., Shenmen C.M., Schuler G.D.,

Aluschul S.F., Zeeberg B., Buetow K.H., Schaefer C.F., Bhat N.K.,

Altschul S.F., Zeeberg B., Buetow K.H., Schaefer C.F., Bhat N.K.,

Hopkins R.F., Jordan H., Moore T., Max S.I., Wang J., Hsieh F.,

Antschenko L., Marusina K., Farmer A.A., Rubin G.M., Hong L.,

Bromnstein M.J., Usdin T.B., Toshiyuki S., Carninci P., Prange C.,

Bromnstein M.J., McMenn P.J., McKerran K.J., Malek J.A., Gunaratne P.H.,

Bosak S.A., McEwan P.J., McKerran K.J., Malek J.A., Gunaratne P.H.,

And S.S., Loquellano N.M., Soderers G.J., Abramson R.D., Mullahy S.J.,

Bosak S.A., McEwan P.J., McKerran K.J., Lu X., Glibbs R.A.,

Allalon D.K., Wuzny D.M., Sodergren B.J., Lu X., Glibbs R.A.,

Villalon D.K., Muzny D.M., Sodergren B.J., Lu X., Glibbs R.A.,

Rahey J., Helton E., Ketteman M., Madan A., Rodrigues S., Sanchez A.,

Multing M., Madan A., Young A.C., Shevchenko Y., Bouffard G.G.,

Alakesley R.W., Touchman J.W., Green E.D., Dickson M.C.,

Butterfield Y.S.N., Krzywniski M.I., Skalska U., Smailus D.E.,

Schnert field Y.S.N., Krzywniski M.I., Skalska U., Smailus D.E.,

Schnert D. Warra M., Jones S.J.M., Marra M.A.,

Schnert D. Warra M.A.,

Generation and initial analysis of more than 15,000 full-length human
                                                                                                                                                   121 TNDKGRLSKEBIERWVQEAEKYKAEDEVQRERVSAKNALESYAFNMKSAVEDEGLKGKIS 180
                                                                                                                                                                                                   181 BADKKKVLDKCQEVISWLDANTLAEKDEFEHKRKELEQVCNPIISGLYQGAGG-PG--- 235
                 KSENVQDLLLLDVAPLSLGLETAGGVMTALIKRNSTIPTKQTQIFTTYSDNQPGVLIQVY
                                                                 EGERAMTKDNNLLGRFELSGI PPAPRGVPQIEVTFDI DANGILNVTATDKSTGKANKITI
                                                                                                                                                                                                                                                                                                                                                                                                      P54652; Q15508; Q9UE78;
01-0CT-1996 (Rel. 34, Last sequence update)
05-UUL-2004 (Rel. 44, Last annotation update)
Heat shock-related 70 kDa protein 2 (Heat shock 70 kDa protein 2).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           MEDLINE=95130116; PubMed=7829106; Bonnycastle L.L.C., Yu C.-E., Hunt C.R., Trask B.J., Clancy K.P., Weber J.L., Patterson D., Schellenberg G.D.; "Cloning, sequencing, and mapping of the human chromosome 14 heat shock protein gene (HSPA2)."; Genomics 23:85-93(1994).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Eukaryoča; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
Mammalia; Eutheria; Primates; Catarrhini; Hominidae; Homo.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Gozalski T.J., Krensky A.M.;
Submitted (APR-1996) to the EMBL/GenBank/DDBJ databases
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Natl. Acad. Sci. U.S.A. 99:16899-16903(2002)
                                                                                                                                                                                                                                                                                                                                                                                         639 AA.
                                                                                                                                                                                                                                                                       --PGGFGAQ---GPKGGSGSGPTIEEVD 258
                                                                                                                                                                                                                                                                                                GPPGAGGAAPGGGAPGGSSGPTIEEVD 583
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SEQUENCE OF 1-126 FROM N.A.
MEDLINE=95152505; PubMed=7849706;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           NCBI_TaxID=9606;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Name=HSPA2;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                622
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Megachile rotundata (alfalfa leafcutting bee).
Eukaryota, Metazoa, Arthropoda; Hexapoda; Insecta; Pterygota;
Neoptera; Endopterygota; Hymenoptera; Apocrita; Aculeata; Apoidea;
Megachilidae; Megachilinae; Megachille.
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YOCUM G.D., Kemp W.P.;
Submitted (FEB-2004) to the EMBL/GenBank/DDBJ databases.
-!- SIMILARITY: Belongs to the heat shock protein 70 family.
EMBL; AYS50116; AAS57865.1; -.
                                                                                                                                                                        Length 644;
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                                                                                                                                         DE07774C8CAB2925 CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       GO; GO:0005524; F:ATP binding; IEA.
GO; GO:0006457; P:ptotein folding; IEA.
GO; GO:0006986; P:response to unfolded protein; IEA.
InterPro; IPR0011023; Hsp70.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 (TrEMBLrel. 27, Created)
(TrEMBLrel. 27, Last sequence update)
(TrEMBLrel. 27, Last annotation update)
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                                                                                                                                                                                                        29,
                                                                                                                                                                       80.9%; Score 1063; DB 1; 79.8%; Pred. No. 1.3e-57; ive 20; Mismatches 29;
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70 kDa heat shock cognate protein (Fragment).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   583 AA
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 623 GMPGGAPGAGSTGGGPTIEEVD 644
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   PRT;
                 PRINTS; PR00301; HEATEHOCK70.
ProDom; PD000089; Hsp70; 1.
TIGRFAMS; TIGR01991; HscA; 1.
PROSITE; PS00297; HSP70_1; 1.
PROSITE; PS01036; HSP70_2; 1.
PROSITE; PS01036; HSP70_3; 1.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Probom; PD000089; Hsp70; 1.
PROSITE; PS00329; HSP70_2; 1.
PROSITE; PS01036; HSP70_3; 1.
ATP-binding; Heat shock.
                                                                                                                                       70220 MW;
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PRINTS; PR00301; HEATSHOCK70.
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Matches 208; Conservative
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Matches 209; Conservative
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        Pfam; PF00012; HSP70; 1.
                                                                                                                                         644 AA;
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05-JUL-2004 (
05-JUL-2004 (
                                                                                                                                       SEQUENCE
                                                                                                                                                                                                                                                                                                                                              443
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                                                                                                                                                                                                                                                                                                                                                                                                                                                181
                                                                                                                                                                          Query Match
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                                                027121
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                                                                                                                                                                                     This SWISS-PROT entry is copyright. It is produced through a collaboration between the Swiss Institute of Bioinformatics and the EMBL outstation-the Buropean Bioinformatics Institute. There are no restrictions on its use by non-profit institutions as long as its content is in no way modified and this statement is not removed. Usage by and for commercial entities requires a license agreement (See http://www.isb-sib.ch/announce/or send an email to license@isb-sib.ch).
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Roux A.-F., Nguyen V.T.T., Squire J.A., Cox D.W.;
"A heat shock gene at 14q22: mapping and expression.";
Hum. Mol. Genet. 3:1819-1822(1994).
-!-FUNCTION: In cooperation with other chaperones, Hsp70s stabilize preexistent proteins against aggregation and mediate the folding of newly translated polypeptides in the cytosol as well as within organelles. These chaperones participate in all these processes through their ability to recognize nomative conformations of other proteins. They bind extended peptide segments with a net hydrophobic character exposed by polypeptides during translation and membrane translated, or following stress-induced damage.
-!- SIMILARITY: Belongs to the heat shock protein 70 family.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               387 KSENVQDLLLLDVTPLSLGIETAGGVMTPLIKRNTTIPTKQTQTFTTYSDNQSSVLVQVY
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     TNDKGRLSKDDIDRAVQEAERYKSEDEANRDRVAAKNALESYTYNIKQTVEDEKLRGKIS
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               TNDKGRLSKEBIERMVQEAEKYKAEDEVQRERVSAKNALESYAFNMKSAVEDEGLKGKIS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     RADKKKVLDKCQEVISWLDANTLAEKDEPEHKRKELEQVCNPIISGLYQGAGGPGPGFG
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        80.6%; Score 1059.5; DB 1; Length 639; 79.1%; Pred. No. 2.2e-57; ive 24; Mismatches 25; Indels 5;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   T -> P (in Ref. 3; AAH36107).
Missing (in Ref. 3; AAH36107).
E -> G (in Ref. 3; AAH36107).
L -> S (in Ref. 2).
                                                                                                                                                                                                                                                                                                                                                                                                                                            GO; GO:0003773; F:heat shock protein activity; TAS.
GO; GO:0007140; P:male meiosis; TAS.
GO; GO:0007286; P:spermatid development; TAS.
InterPro; IRR001023; Hsp70.
FRINTS; PR00301; HSP70; 1.
PRINTS; PR00301; HSATSHOCK70.
ProDom p. P00000891; HSATSHOCK70.
ProDom; P00000891; HSAA; 1.
PROSITE; PS00229; HSP70 1; 1.
PROSITE; PS00329; HSP70 2; 1.
PROSITE; PS01036; HSP70 3; 1.
PROSITE; PS01036; HSP70 3; 1.
PROSITE; PS01036; HSP70 3; 1.
ATP-binding; Chaperone; Heat shock; Multigene family.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     3851755494E7B729 CRC64;
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                                                                                                                                                                                                                                                                                                                                 EMBL; BC036107; AAH01752.1; -. EMBL; BC036107; AAH36107.1; -.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              70021 MW;
                                                                                                                                                                                                                                                                                                     EMBL; L26336; AAA52698.1; -.
EMBL; U56725; AAD11466.1; -.
                                                                                                                                                                                                                                                                                                                                                          EMBL; U10149; AACS0076.1; ---
PIR; A55719; A55719.
HSSP; P1912.0; 3HSC.
Genew; HGNC:5235; HSPA2.
H-InvDB; HXX0011736; ---
MIM; 140560; ---
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639 AA;
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CONFLICT
CONFLICT
CONFLICT
SEQUENCE
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384 KSEEVQDLILLDVAPLSLGIETAGGVMTSLIKRNTTVPTKQTQTFTTYADNQPGVLIQVY 443
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              181 BADKKKVLDKCQEVISWLDANTLAEKDEFEHKRKELEQVCNPIISGLYQGAGGPG---- 235
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  9
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               EGERAMTKDNNLLGRFELSGIPPAPRGVPQ1EVTFD1DANG1LNVTATDKSTGKANKIT1
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         19;
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                                                                                                                                                                                                      Heat shock cognate protein.
Urechis caupo (Innkeeper worm) (Spoonworm).
Bukaryota; Metazoa; Echiura; Xenopneusta; Urechidae; Urechis.
NCBI_TaxID=6431;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Rosenthal E.;
Submitted (JUN-1995) to the EMBL/GenBank/DDBJ databases.
-!- SIMILARITY: Belongs to the heat shock protein 70 family.
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80.6%; Score 1059.5; DB 2; Length
3est Local Similarity 75.0%; Pred. No. 2.2e-57;
4atches 207; Conservative 24; Mismatches 26; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         GO; GO:0005424; F:ATP binding; IEA.
GO; GO:0005427; F:ATP binding; IEA.
GO; GO:0006457; P:Protein folding; IEA.
GO; GO:000686; P:response to unfolded protein; IEA.
GO; GO:000686; P:response to unfolded protein; IEA.
GO; GO:000686; P:response to unfolded protein; IEA.
FINETS: PRO01023; HSP70.
FROM: PROSITE; PS001039; HSP70.
FROSITE; PS001039; HSP70.
FROSITE; PS01036; HS
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                                                                                01-NOV-1996 (TrEMBLrel. 01, Created)
01-NOV-1996 (TrEMBLrel. 01, Last sequence update)
01-MAR-2004 (TrEMBLrel. 26, Last annotation update)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ------PGGFGAQGPKGGSGSGPTIEEVD 258
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Last annotation update)
658 AA
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01-NOV-1997 (Rel. 35, Created)

01-NOV-1997 (Rel. 35, Last sequence

05-JUL-2004 (Rel. 44, Last annotation

Heat shock 70 kDa protein (HSP70).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            MEDLINE=94155469; PubMed=8111976;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Dev. Genet. 14:485-491(1993).
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PRELIMINARY;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           658 AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                 SEQUENCE FROM N.A.
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Urechis caupo.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Rosenthal B.;
                                          Q27121;
01-NOV-1996
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HS70 PLEWA
ID HS70 Pl
DT 01-NOV
DT 01-NOV
DT 01-NOV
DT 05-JUL
DE Heat 8
GN Name=H
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Best Local Similarity 76.08
Matches 209; Conservative
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   NCBI_TaxID=6573;
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                                                                                                     MEDLINE-94244484; PubMed-8187647;
Billoud B., Rodriguez-Martin M.L., Berard L., Moreau N., Angelier N.;
"Constitutive expression of a somatic heat-inducible hsp70 gene during
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    TNDKGRLSKEEIERMVQEAERYKADDEAQREKVSAKNTLESIAFNMKSTVEGDNLKDKIS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               566 EDDRKKIVDKCNQTISWMENNQMAEKEEYEHQQKELEKVCNSIITKLYQGGMPGGGPSGS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               1 KSENVQDLLLLDVAPLSLGLETAGGVMTALIKRNSTIPTKQTQIFTTYSDNQPGVLIQVY
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Name-hsp70;
Patinopecten yessoensis (Ezo giant scallop) (Yesso scallop).
Bukaryota; Metazoa; Mollusca; Bivalvia; Pteriomorphia; Pectinoida;
Pectinoidea; Pectinidae; Mizuhopecten.
              Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
Amphibia; Batrachia; Caudata; Salamandroidea; Salamandridae;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  5,
                                                                                                                                                 amphibian oogeneeis.";
Development 119:921-932(1993).
-!- SIMILARITY: Belongs to the heat shock protein 70 family.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  80.5%; Score 1058; DB 1; Length 645; 79.6%; Pred. No. 2.7e-57; ive 24; Mismatches 27; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                     TIGRPAMS, TIGRO1991, HSGA, 1.
PROSITE; PS00297; HSP70_1; 1.
PROSITE; PS00329; HSP70_2; 1.
PROSITE; PS01036; HSP70_3; 1.
ATP-binding; Heat shock; Multigene family.
SEQUENCE 645 AA; 70977 MW; PA5111ACFDF3413C CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Last sequence update)
Last annotation update)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  657 AA
 newt)
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(Iberian ribbed
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                                                                                                                                                                                                                                                                                                                                                               HSSP; P08109; ICKR.
InterPro; IPR001023; Hsp70.
Pfam: PF00012; HSP70; 1.
PRINTS; PR00301; HBATSHOCK70.
ProDom; PD000089; Hsp70; 1.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           05-JUL-2004 (TrEMBLrel. 27, 05-JUL-2004 (TrEMBLrel. 27, 05-JUL-2004 (TrEMBLrel. 27,
                                                                                                                                                                                                                                                                                                                                    EMBL; X71951; CAA50749.1;
PIR; I51129; I51129.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Best Local Similarity 79.69
Matches 207; Conservative
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Pleurodeles waltlii
                                                                            [1]
SEQUENCE FROM N.A.
                                                            NCBI_TaxID=8319;
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100 Q
101 Q
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    EGERAMTKDNNLLGRFELSGIPPAPRGVPQIEVTFDIDANGILNVTATDKSTGKANKITI 120
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       TNDKGRLSKEEIERMVQEAEKYKAEDEVQRERVSAKNALESYAFNMKSAVEDEGLKGKIS 180
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              503 TNDKGRLSKEEIERWVNDAEKYKSEDDTQRNRVSSKNGLESYAFQMKSTAEDDKLKDKIS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             181 EADKKKVLDKCQEVISWLDANTLAEKDEFEHKRKELEQVCNPIISGLYQGAGG-----
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A Lowe D.G., Moran L.A.;
Towe D.G., Moran L.A.;

"Molecular cloning and analysis of DNA complementary to three moust
I "Molecular cloning and analysis of DNA complementary to three moust
I J. Biol. Chem. 251:2102-2112(1986).
I J. Biol. Chem. 251:2102-2112(1986).
I J. Biol. MI2573; AAA37863.1; -..
R HSSP; P04475; 1DG4.
R MGD; MGI:99517; HSpalb.
R GO; GO:0006281; P:DNA repair; IMP.
R GO; GO:0006281; P:DNA repair; IMP.
R GO; GO:0001719; P:inhibition of caspase activation; IDA.
R GO; GO:0009408; P:response to heat; IMP.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
Mammalia; Eutheria; Rodentia; Sciurognathi; Muridae; Murinae; Mus
A Wu L., Song L., Qiu L., Xu W., Guo X., Xiang J.;

SEQUENCE FROM N.A.

Wu L., Song L., Qiu L., Xu W., Guo X., Xiang J.;

Submitted (NOV-2003) to the EMBL/GenBank/DDBJ databases.

-!- SIMILARITY: Belongs to the heat shock protein 70 family.

R HSSP, P19120; JATR.

R GO; GO:0005524; F:ATP binding; IEA.

GO; GO:0005986; P:response to unfolded protein; IEA.

R GO; GO:0006986; P:response to unfolded protein; IEA.

R PROSTIE; PRO0012; HSP70; 1.

R PRINTS; PR00301; HSP70; 1.

R PROSTIE; PS00297; HSP70; 1.

R PROSTIE; PS00297; HSP70; 1.

R PROSTIE; PS00329; HSP70; 1.

R PROSTIE; PS00329; HSP70; 1.

R ATP-binding; Heat shock.

O SEQUENCE 657 AA; 71419 MW; 223C1094F638724F CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       17;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            234 -----PG--PGGF--GAQGPKGGSGSGPTIEEVD 258
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            623 GMPGGMPGGMPGGADGASTGGSGGPTIEEVD 657
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Ź
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01-NOV-1996 (TrEMBLrel. 01, Last seq
01-MAR-2004 (TrEMBLrel. 26, Last ann
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TNDKGRLSKEEIERMVQEAEKYKAEDEVQRERVSAKNALESYAFNMKSAVEDEGLKGKIS 180
                                            504 TNDKGRLSKDEIERMYQEAEKYKADDEAQKDRIAAKNALESYAFNMKQTIEDEKLRDKLS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        384 KSEAVQDLLLLDVTPLSLGIETAGGVMTALIKRNTTIPTKQTQTFTTYSDNQPGVLIQVY
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 EADKKKVLDKCQEVISWLDANTLAEKDEFEHKRKELEQVCNPIISGLYQGAGG--PG--P
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     EADKKKVLDKCQEVISWLDANTLAEKDEFEHKRKELEQVCNPIISGLYQGAGG-PG--PG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       61 EGERAMTKDNNLLGRFELSGIPPAPRGVPQIEVTFDIDANGILNVTATDKSTGKANKITI
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 KSENVODLLLLDVAPLSLGLETAGGVMTALI KRNST I PTKQTQI FTTYSDNQPGVL I QVY
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Heat shock protein 70.

Macrobrachium rosenbergii (Giant fresh water prawn).

Bukaryota; Metazoa; Arthropoda; Crustacea; Malacostraca;

Bumalacostraca; Bucarida; Decapoda; Pleocyemata; Caridea;

Palaemonoidea; Palaemonidae; Macrobrachium.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           28; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           70905 MW; BDBF43EFF9BAEFEB CRC64;
                                                                                                                                                                                                                                                                                                                                                                                   05-JUL-2004 (TrEMBLrel. 27, Created)
05-JUL-2004 (TrEMBLrel. 27, Last sequence update)
05-JUL-2004 (TrEMBLrel. 27, Last annotation update)
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 80.3%; Score 1055; DB 2
77.8%; Pred. No. 4.2e-57
ive 23; Mismatches 28
                                                                                                                                                                                                                                                                                                                                              649 AA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     GGF-GAQG---PKGGSGSGPTIEEVD 258
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           GGFPGAPGGGAAPGGGSSGPTIEEVD 649
                                                                                                                                                                                                                  238 GFGAQGPKGGS-GSGPTIEEVD 258
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Pfam; PP00012; HSP70; 1.
PRINTS; PR00301; HEATSHOCK70.
ProDom; PD000089; HB970; 1.
PROSITE; PS00297; HSP70 1; 1.
PROSITE; PS01036; HSP70 2; 1.
ATP-binding; Heat shock
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Best Local Similarity 77.8% Matches 207; Conservative
                                                                                                                                                                                                                                                                                                                                           PRELIMINARY;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           649 AA;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           NCBI_TaxID=79674;
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63
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    384 KSEAVODLLFVDVAPLSLGIETAGGVMTALIKRNTTIPTKTSQTFTTYSDNQPGVLIQVY
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                                                                                                                                                                                                                                      34 NSTIPTKOTOIFTTYSDNOPGVLIQVYEGERAMTKDNNLLGRFELSGIPPAPRGVPQIEV
                                                                                                                                                                                                                                                                                                                       94 TFDIDANGILNVTATDKSTGKANKITITNDKGRLSKERIERMVQEAEKYKAEDEVQRERV
                                                                                                                                                                                                                                                                                                                                                                                                            SAKNALESYAFNMKSAVEDEGLKGKISEADKKKVLDKCOEVISWLDANTLAEKDEFEHKR
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 SEQUENCE FROM N.A.
MEDLINE=99314887; PubMed=10428634; DOI=10.1016/S0020-7519(99)00002-8;
                                                                                                                                                                                         Gaps
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Bukaryota; Metazoa; Nematoda; Chromadorea; Spirurida; Filarioidea;
Setariidae; Setaria.
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                                                                                                                                             Query Match 80.4%; Score 1056; DB 2; Length 228; Best Local Similarity 91.6%; Pred. No. 1e-57; Matches 207; Conservative 11; Mismatches 6; Indels ;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      KELEQVCNPIISGLYQGAGGPGPGGFGAQG-PKGGSGSGPTIEEVD
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    GO; GO:0005524; F:MTP binding; IEA.
GO; GO:0005524; F:MTP binding; IEA.
GO; GO:0006487; P:Perctein folding; IEA.
GO; GO:0006986; P:response to unfolded protein; IEA.
InterPro; IPR00102; HSP70.
PRINTS; PR00301; HEATSHOCK70.
PROSITE; PS00329; HSP70.
PROSITE; PS00329; HSP70.
PROSITE; PS01036; HSP70.
ATP-binding; Heat shock.
SEQUENCE 645 AA; 70292 MW; AD0E39AB64540366 CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             70292 MW; 4D0E39AB64540366 CRC64;
                                                                                                       228 AA; 24872 MW; BD7A09314CE0FEDC CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              01-MAY-1999 (TrEMBLrel. 10, Created)
01-MAY-1999 (TrEMBLrel. 10, Last sequence update)
01-MAR-2004 (TrEMBLrel. 26, Last annotation update)
Heat shock protein 70.
GO; GO:0000723; P:telomere maintenance; IMP.
InterPro; IRF001023; Hsp70.
Pfam; PF00012; HSP70; 1.
ATP-binding; Heat shock.
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                                                                                 NON TER
SEQUENCE
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AC 09654
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443 120

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Gaps

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Length 649;

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EXTRAINE-EVBNN, TISSUE-Mammary tumor. C3, and Testis;

KRY STRAINE-22388257; PubMed=12477932; DOI=10.1073/pnas.242603899;

RA Strausberg R.L., Feingold B.A., Grouse L.H., Derge J.G.,

KI Strausherg R.L., Zeeberg B., Wagner L., Shemmen C.M., Schuler G.D.,

RA Altschul S.F., Zeeberg B., Buctow K.H., Schaefer C.F., Bhat N.K.,

RA Altschul S.F., Jordan H., Moore T., Max S.I., Wang J., Haileh F.,

RA Altschul S.F., Jordan H., Moore T., Max S.I., Wang J., Haileh F.,

RA Stapleton M., Soares M.B., Bonaldo M.F., Casavant T.L., Scheetz T.E.,

RA Brownstein M.J., Usdin T.B., Toshiyuki S., Carninci P., Prange C.,

RA Browstein M.J., McKernan K.J., Male M. S.J.,

Raha S.A., McEwan P.J., McKernan K.J., Male M.A., Gay L.J., Hulyk S.W.,

RIchards S., Worley K.C., Hale S., Garcia A.M., Gay L.J., Hulyk S.W.,

RIlalon D.K., Muzny D.M., Sodergren B.J., Lu X., Gibbs R.A.,

Rahesley R.W., Touchman J.W., Green E.D., Dickson M.C.,

Rahesley R.W., Touchman J.W., Green E.D., Dickson M.C.,

Rodinguez A.C., Grimwood J., Schmutz J., Myers R.M., Butterfield Y.S.,

Rayminski M.I., Skaleka U., Smailus D.E., Schnerch A., Schein J.E.,

Raymond M. Marra M.A.;

Referezation and initial analysis of more than 15,000 full-length human
Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
Mammalia; Butheria; Rodentia; Sciurognathi; Muridae; Murinae; Mus.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  2; Length 633;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Strausberg R.; Submitted (MAY-2003) to the EMBL/GenBank/DDBJ databases.
-!- SIMILARITY: Belongs to the heat shock protein 70 family.
EMBL; BC004714; ARH04714.1; -.
EMBL; BC052350; AAH52350.1; -.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Strausberg R.;
Submitted (MAR-2001) to the EMBL/GenBank/DDBJ databases
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                                                                                                                                                                                                                                                                                                              Last sequence update)
Last annotation update)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Proc. Natl. Acad. Sci. U.S.A. 99:16899-16903(2002)
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                                                                                                                                                                                                                                         633 AA.
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             STRAIN=FVB/N; TISSUE=Mammary tumor. C3;
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MGD; MGI:96243; Hspa2.
GO; GO:0005739; C:mitochondrion; IDA.
GO; GO:0005515; F:protein binding; IPI.
InterPro; IPR001023; Hsp70.
PFINITS; PR00301; HSP70; 1.
                                                                                                                                                                                                                                                                                        Created)
                                                                                                                                                                                                                                         PRT;
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PROSITE; PS00297; HSP70_1; 1.
PROSITE; PS01349; HSP70_2; 1.
PROSITE; PS01036; HSP70_3; 1.
ATP-binding; Heat shock.
SEQUENCE 633 AA; 69641 MW;
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                                                                                                                       621 -----GGSSGGPTIEEVD
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01-JUN-2001 (TrEMBLrel. 17,
25-OCT-2004 (TrEMBLrel. 28,
Heat shock protein 2.
                                                                           241 AQGPKGGSGSGPTIEEVD
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   and mouse cDNA sequences.
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                                                                                                                                                                                                                                                                                                                                                                                                        Mus musculus (Mouse)
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                                                                                                                                                                                                                                                                                                                                                                                    Name=Hspa2;
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                                                                                                                                                                                                                                         Q99KD7
                                                                                                                                                                                              RESULT 81
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MEDLINE=8830212; PubMed=3405224;

MEDLINE=88302212; PubMed=884;

MEDLINE=88302212; PubMed=884;

MEDLINE=88302212; PubMed=884;

MEDLINE=88302212; PubMed=884;

MEDLINE=8830212; PubMed=884;

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Mammalia; Eutheria; Rodentia; Sciurognathi; Muridae; Murinae; Mus.
NCBI_TaxID=10090;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           20; Indels 11;
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80.3%; Score 1054.5; DB 1; Length 633;
Best Local Similarity 79.1%; Pred. No. 4.3e-57;
Matches 204; Conservative 23; Mismatches 20; Indels 11;
                                                                                                 01-AUG-1990 (Rel. 15, Created)
01-AUG-1990 (Rel. 15, Last sequence update)
05-UUL-2004 (Rel. 44, Last annotation update)
Heat shock-related 70 kDa protein 2 (Heat shock protein 70.2).
Name-Hspa2; Synonyms-Hcp70.2, Hsp70-2;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       SIMILARITY: Belongs to the heat shock protein 70 family.
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PROSITE; PS00329; HSP70_1; 1.
PROSITE; PS00329; HSP70_2; 1.
PROSITE; PS01036; HSP70_3; 1.
ATP-binding; Chaperone; Heat shock; Multigene family.
SEQUENCE 633 AA; 69740 MW; E7F9040FZAB13BDD CRC64;
                                                        633 AA
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GO; GO:0005515; F:protein binding; IPI.
InterPro; IPR001023; Hsp70.
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ProDom; PD000089; Hsp70; 1.
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                                                        STANDARD;
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Strausberg R.L., Feingold E.A., Grouse L.H., Derge J.G.,
Altausnar R.D., Collins F.S., Wagner L., Shemmen C.M., Schuler G.D.,
Altachul S.F., Zeeberg B., Buerow K.H., Schaefer C.F., Bhat N.K.,
Altachul S.F., Zeeberg B., Buerow K.H., Schaefer C.F., Bhat N.K.,
Hopkins R.F., Jordan H., Moore T., Max S.I., Wang J., Heibe F.,
A stapleton M., Soares M.B., Bonaldo M.F., Casavant T.L., Scheetz T.E.,
Brownstein M.J., Usdin T.B., Toshiyuki S., Carninci P., Prange C.,
Raha S.S., Loquellano N.A., Peters G.J., Abramson R.D., Mullahy S.J.,
Bosak S.A., McEwan P.J., McKernan K.J., Malek J.A., Gunaratne P.H.,
Richards S., Worley K.C., Hale S., Garcia A.M., Gay L.J., Hulyk S.W.,
A villalon D.K., Muzny D.M., Sodergren E.J., Lu X., Gibbs R.A.,
Rhiting M., Madan A., Young A.C., Shevchenko Y., Boutfard G.G.,
Mhiting M., Madan A., Young A.C., Shevchenko Y., Boutfard G.G.,
Minting M., Madan A., Young A.C., Shevchenko Y., Boutfard G.G.,
Marciguez A.C., Grimwood J., Schmutz J., Myers R.M., Butterfield Y.S.,
Jones S.J., Marra M.A.,
Jones S.J., Marra M.A.,
T. "Generation and initial analysis of more than 15,000 full-length human
              2,
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                                                                                            EGERAMIKDNNLLGRFELSGIPPAPRGVPQIEVTFDIDANGILNVTATDKSTGKANKITI 120
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                                                       387 KSENVQDLLLLDVTPLSLGIETAGGVMTPLIKRNTTIPTKQTQTFTTYSDNQSSVLVQVX
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               Gaps
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Mammalia, Butheria, Rodentia, Sciurognathi, Muridae, Murinae, Rattus.
              11;
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              20; Indels
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25-OCT-2004 (TrEMBLrel. 28, Last annotation update)
Testis-specific heat shock protein-related gene hst70.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  and mouse cDNA sequences.";
Proc. Natl. Acad. Sci. U.S.A. 99:16899-16903(2002).
79.1%; Pred. No. 4.3e-57;
tive 23; Mismatches 2(
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Pfam; PR00012; HSP70; 1.
PRINTS; PR00301; HEATSHOCK70.
PRODGOM; PD000089; HSp70; 1.
PROSITE; PS00297; HSP70_1; 1.
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            204; Conservative
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Local Similarity
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25-0CT-2004
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01-MAR-2004 (TrEMBLrel. 26, Last annotation update)
Heat shock protein 70.
Wuchereria bancrofti.
Bukaryota; Metazoa; Nematoda; Chromadorea; Spirurida; Filarioidea; Onchocercidae; Wuchereria.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         SEQUENCE FROM N.A.
Wijesundera S.W., Pathiratne B.N., Perera R., Karunanayake E.H.,
Submitted (JUL-1999) to the EMBL/GenBank/DDBJ databases.
-!- SIMILARITY: Belongs to the heat shock protein 70 family.
EMBL, AF167352, AAF32254.1;
HSSP; P19120; 3HSC.
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                                                                                                                                                                     11;
                                                                                                                   80.3%; Score 1054.5; DB 2; Length 633; 79.1%; Pred. No. 4.3e-57; ive 23; Mismatches 20; Indels 11;
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                                                                        69641 MW; 6F65773C7EFFA69F CRC64;
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GO; GO:0006457; P:protein folding; IEA.
GO; GO:0006986; P:response to unfolded protein; IEA.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 80.2%; Score 1054; DB 2; 79.4%; Pred. No. 4.8e-57; ive 20; Mismatches 30;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          241 AQGPKGGSGSGPTIEEVD 258
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          -----GGSSGGPTIEEVD 633
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            InterPro; IPR001023; Hsp70.
Pfam; PF00012; HSP70; 1.
PROSITE; PS00291; HSP70_1; 1.
PROSITE; PS00229; HSP70_1; 1.
PROSITE; PS01036; HSP70_2; 1.
PROSITE; PS01036; HSP70_2; 1.
ATP-binding; Heat shock
PROSITE; PS00329; HSP70_2; 1.
PROSITE; PS01035; HSP70_3; 1.
ATP-binding; Heat shock.
SEQUENCE 633 AA; 69641 MW;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Best Local Similarity 79.48 Matches 208; Conservative
                                                                                                                   Query Match
Best Local Similarity 79.1
Matches 204; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               PRELIMINARY;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    645 AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     NCBI_TaxID=6293;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        267
                                                                                                                                                                                                                                                                 387
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61 EGERAMTKDNNLLGRFELSGIPPAPRGVPQIEVTFDIDANGILNVTATDKSTGKANKITI 120
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          121 TNDKGRLSKEEIERMVQEAEKYKAEDEVQRERVSAKNALESYAFNMKSAVEDEGLKGKIS 180
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             181 EADKKKVIDKCQEVISWLDANTLAEKDEFEHKRKELEQVCNPIISGLYQGAGG-----P 234
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        566 EDDKKKVLEKCGEVLAMLDANQAAEKEBFEHQQKELEGICNPIITKLYQAGGAMPGGPMP 625
558 EGDRKKISEKCEETIKWLDANQQADKEEYEHRQKELESVCNPIITKMYQEAGGAGGMPGG 617
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            386 KSETVQDLLLLDVAPLSLGIETAGGVMTSLIKRNTTIPTKTSQTFTTYSDNQPGVLIQVY
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1 KSENVQDLLLLDVAPLSLGLETAGGVMTALIKRNSTIPTKQTQIFTTYSDNQPGVLIQVY
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Gaps
                                                                                                                                                                                                                                                                                Heat shock protein 70 A.
Heat shock protein 70 A.
Heterodera glycines (Soybean cyst nematode).
Eukaryota; Metazoa; Nematoda; Chromadorea; Tylenchida; Tylenchida;
Tylenchoidea; Heteroderidae; Heteroderinae; Heterodera.
NCBI_TaxID=51029;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Query Match 80.1%; Score 1052.5; DB 2; Length 650; Best Local Similarity 79.4%; Pred. No. 5.9e-57; Matches 212; Conservative 19; Mismatches 25; Indels 11;
                                                                                                                                                                                                                                                                                                                                                                                                                                 SEQUENCE FROM N.A. KNOVALLWOOD D.J.; KOVALEVA E.S., Chitwood D.J.; KOVALEVA GCT-2002) to the EMBL/GenBank/DDBJ databases.-!- SIMILARITY: Belongs to the heat shock protein 70 family.EMBL; AY161283; AAN78300.1; -.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    HSSP; P19120; 1HPM.

GO; GO: 0005524; F: ATP binding; IEA.

GO; GO: 0006457; P: Protroin folding; IEA.

GO; GO: 0006487; P: Protroin folding; IEA.

GO; GO: 0006486; P: Presponse to unfolded protein; IEA.

InterPro; IPR001023; Hsp70.

Pfam; PR00012; HSP70; 1.

PROSITE; PS00297; HSP70; 1.

PROSITE; PS00139; HSP70 1; 1.

PROSITE; PS00139; HSP70 2; 1.

PROSITE; PS00139; HSP70 2; 1.

PROSITE; PS00139; HSP70 2; 1.
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01-WAR-2001 (TrEMBLrel. 16, Last sequence update)
01-WAR-2004 (TrEMBLrel. 26, Last annotation update)
                                                                                                                                                                                                                                                          Last sequence update)
Last annotation update)
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Heterodera glycines (Soybean cyst nematode).
                                                                                                                                                                                             650 AA.
                                                                                   646
                                      ---SGPTIEEVD 258
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     626 GGGMPGGGGAAG-AGGAG-GPTIEEVD 650
                                                                                   618 MPGGMPGGGSGMGGDAGSGNRGPTIEEVD
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     235 G---PGGFGAQGPKGGSGSGPTIEEVD
                                                                                                                                                                                                                                        Created)
                                                                                                                                                                                                                                     01-MAR-2003 (TrEMBLrel. 23, 01-MAR-2003 (TrEMBLrel. 23, 01-MAR-2004 (TrEMBLrel. 26,
                                                                                                                                                                                             PRELIMINARY;
                                        239 FGAQGPKGGSG-
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     650 AA;
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                                        563
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  TNDKGRLSKEEIERMVNDAEKYKQEDDKQRDRVSAKNALESYAFTMKSTVEDEKVKEKIA 557
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     9
                      504 TNDKGRLSKDEIERWYQEAEKYKADDEAQKDRIAAKNALESYAFWMKQTIEDEKLKDKIS
                                                                                                         564 EEDKKKIQEKCDETVRWLDGNQTAEKDEFEHRQKELESVCNPIITKLYQSAGAMPGGMPG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            378 KSEAVQDLLILDVAPLSLGLETAGGVMTALIKRNTTIPTKQTQTFTTYSDNQPGVLIQVY
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 438 EGERAMTRDNNLLGKFELSGIPPAPRGVPQIEVTFDIDANGILSVSAVDKSTGKQNKITI
TNDKGRLSKEEIERMVQEAEKYKAEDEVQRERVSAKNALESYAFNMKSAVEDEGLKGKIS
                                                                                   EADKKKVLDKCQEVISWLDANTLAEKDEFEHKRKELEQVCNPIISGLYQGAGG-PG--PG
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       MEDLINE=92366447; PubMed=1323828;
Bork P., Sander C., Valencia A.;
"An ATPaese domain common to prokaryotic cell cycle proteins, sugar kinases, actin, and hap70 heat shock proteins.";
Proc. Natl. Acad. Sci. U.S.A. 89:7290-7294(1992).
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80.1%; Score 1052.5; DB 2; Length 646;
Best Local Similarity 77.7%; Pred. No. 5.9e-57;
Matches 209; Conservative 21; Mismatches 28; Indels 11;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Teale J.M., Bangs L.A.;
Submitted (SEP-1996) to the EMBL/GenBank/DDBJ databases.
-!- SIMILARITY: Belongs to the heat shock protein 70 family.
EMBL; U70213; AABL8390.1; -.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Mesocestoides corti.
Eukaryota, Metazoa, Platyhelminthes, Cestoda, Eucestoda,
Cyclophyllidea, Mesocestoididae, Mesocestoides.
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  GO; GO:0005524; F:ATP binding; IEA.
GO; GO:0006457; P:protein folding; IEA.
GO; GO:0006986; P:response to unfolded protein; IEA.
INTERFO: IPRO001023; HSP70.
                                                                                                                                                                                                                                                                                                                                                                                        Last sequence update)
Last annotation update)
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PRINTS: PR00301; HBATSHOCK70.

PROSITE: PS00329; HSP70_2; 1.

PROSITE: PS01036; HSP70_2; 1.

PROSITE: PS01036; HSP70_3; 1.

PROSITE: PS01036; HSP70_3; 1.

PROSITE: PS01036; HSP70_3; 1.

ATP-binding; Heat shock.

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SEQÜENCE 646 AA; 70683 MW; FF2014E17FD9F940
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                                                                                                                                                                    GFGAQGPKGGS-GSGPTIEEVD 258
                                                                                                                                                                                                                                                                                                                                                                      Created)
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                                                                                                                                                                                                                                                                                                                                                                 01-FEB-1997 (TrEMBLrel. 02, 01-FEB-1997 (TrEMBLrel. 02, 01-MAR-2004 (TrEMBLrel. 26,
                                                                                                                                                                                                                                                                                                                           PRELIMINARY;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     SEQUENCE FROM N.A.
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                                                                                   181
                                                                                                                                                                                                                 624
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                                                                                                                    Query Match
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     625
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        506 TNDKGRLSKEEIERMVQEAEKFSKEDEVQRDRVSAKNALESYCFNIKQTMEDSNLKDKIS 565
                                                                                                                                                                                                                                                                                                                                                                                         386 KSETVQDLLLLDVAPLSLGIETAGGWATSLIKRNTTIPTKTSQTPTTYSDVQPGVLIQVY
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       EDDKKKVLEKCGEVLAWLDANQAAEKEBFEHQQKELBGICNPIITKLYQAGGAMPGGPMP
                                                                                                                                                                                                                                                                                                                                                                                                                                   EGERAMIKDNNLLGRPELSGIPPAPRGVPQIEVTPDIDANGILNVTATDKSTGKANKITI
                                                                                                                                                                                                                                                                                                                                                                                                                                                                  EGERAMTKDNNLLGKFELSGIPPAPRGVPQIEVTFDIDANGILNVSAQDKSTGKQNKITI
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       BADKKKVLDKCQEVISWLDANTLAEKDEFEHKRKELEQVCNPIISGLYQGAGG-----P
                                                                                                                                                                                                                                                                                                                                                                          1 KSENVQDLLLLDVAPLSLGLETAGGVMTALIKRNSTIPTKQTQIFTTYSDNQPGVLIQVY
                                                                                                                                                                                                                                                                                                                                            Gaps
Eukaryota; Metazoa; Nematoda; Chromadorea; Tylenchida; Tylenchina; Tylenchina; Tylenchina; Heteroderidae; Heteroderiae;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Name-H8p70-3;
Capra hircus (Goat).
Bukaryota: Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
Mammalia; Butheria; Cetartiodactyla; Ruminantia; Pecora; Bovidae;
Caprinae; Capra.
                                                                                                                                                                                                                                                                                                                                            11;
                                                                                                                                                                                                                                                                                                             80.1%; Score 1052.5; DB 2; Length 650; 79.4%; Pred. No. 5.9e-57; ive 19; Mismatches 25; Indels 11;
                                                       SEQUENCE FROM N.A.

Kovaleva E.S., Yakovlev A.G., Masler E.P.;

Submitted (NOV-2000) to the EMBL/GenBank/DDBJ databases.

-1- SIMILARITY: Belongs to the heat shock protein 70 family.

EMBL, AF318605; ARG47839.1; -

HSSP; P19120; LATR.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             STRAIN-domestica;
Luengrattana Y., Hanzawa K., Watanabe S., Hara H.;
Luengrattana Y., Hanzawa K., Watanabe S., Hara H.;
Submitted (CCT-1999) to the EMBL/GenBank/DDBJ databases.
-- SIMILARITY: Belongs to the heat shock protein 70 family.
EMBL; AB033604; BAA85389.1; --
HSSP; P19120; 1HPM.
GO; GO:0006554; F:AFP binding; IEA.
GO; GO:0006457; P:protein folding; IEA.
GO; GO:0006986; P:response to unfolded protein; IEA.
InterPro; IRR01023; Hsp70.
                                                                                                                                                                                                                                                                                 70644 MW; 318814E3243C2FAB CRC64;
                                                                                                                                            GO; GO:0005524; F:ATP binding; IEA.
GO; GO:0006457; P:protein folding; IEA.
GO; GO:0006486; P:response to unfolded protein; IEA
Intervo; IPR001023; H8p70.
Pfam; PP00012; H8p70; 1.
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Last annotation update)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        636 AA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 G---PGGFGAQGPKGGSGSGPTIEEVD 258
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                                                                                                                                                                                                                        PRINTS; PR00301; HEATSHOCK70.
PROSITE; PS00329; HSP70_2; 1.
PROSITE; PS01036; HSP70_3; 1.
ATP-binding; Heat shock.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               01-MAY-2000 (TrEMBLrel. 13,
01-MAY-2000 (TrEMBLrel. 13,
01-MAR-2004 (TrEMBLrel. 26,
70 kDa heat shock protein.
                                                                                                                                                                                                                                                                                                                             Local Similarity 79.4 nes 212; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       PRELIMINARY;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Pfam; PF00012; HSP70; 1
                                                                                                                                                                                                                                                                                     650 AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   SEQUENCE FROM N.A.
                           NCBI_TaxID=51029;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   NCBI_TaxID=9925;
                                                                                                                                                                                                                                                                  ATP-binding;
SEQUENCE 69
                                                                                                                                                                                                                                                                                                                                                                                                                                   61
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                                                                                                                                                                                                                                                                                                                    TNDKGRLSKERIERMVQEAEKYKAEDEVQRERVSAKNALESYAFNMKSAVEDEGLKGKIS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     507 TNDKGRLSKDDIDRAVQEAERYKSEDEANRDRVAAKNAVESYTYNIKQTVEDEKLRGKIS
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                                                                                                                                                                                                                                                                                      1 KSENVQDLLLLDVAPLSLGLETAGGVMTALIKRNSTIPTKQTQIPTTYSDNQPGVLIQVY
                                                                                                                                                                                                                                          Gaps
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Gaps
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-1- SIMILARITY: Belongs to the heat shock protein 70 family.
EMBL; AB022839; BAC67184.1; --
HSSP; POB107; 153X.
GO; GO:0005254; F:ATP binding; IEA.
GO; GO:0005524; P:protein folding; IEA.
GO; GO:0006986; P:protein folding; IEA.
                                                                                                                                                                                           Length 636;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Length 623;
                                                                                                                                                                                                                                       23; Indels
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                                                                                                                                            69866 MW; 1844AC36558B7DF6 CRC64;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  01-JUN-2003 (TrEMBLrel. 24, Created)
01-JUN-2003 (TrEMBLrel. 24, Last sequence update)
01-MAR-2004 (TrEMBLrel. 26, Last annotation update)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     79.9%; Score 1050; DB 2;
80.0%; Pred. No. 8.1e-57;
tive 26; Mismatches 20;
                                                                                                                                                                                    80.0%; Score 1051; DB 2; 78.7%; Pred. No. 7.2e-57; ive 24; Mismatches 23;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           623 AA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        01-JUN-2003 (TrEMBLrel. 24, Last seq
01-MAR-2004 (TrEMBLrel. 26, Last ann
Heat shock protein 70 kDa (Fragment)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           PRT;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      241 AQGPKGGSGSGPTIEEVD 258
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  GSGSSG----GPTIEEVD 636
PRINTS; PR00301; HEATSHOCK70.
ProDom; PD000089; HB701.
PROSITE; PS00297; HS70 1: 1.
PROSITE; PS00329; HS70 2; 1.
ATP-binding; Heat Bhock.
SEQUENCE 636 AA; 69866 MW;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        InterPro; IPR001023; Hsp70.
Pfam; PP00102; HSP70.
PRINTS; PR00301; HSP70; 1.
ProDom; P0000089; Hsp70; 1.
PROSITE; PS00329; HSP70; 1.
PROSITE; PS01329; HSP70; 2; 1.
ATP-binding; Heat shock:
                                                                                                                                                                                                               Best Local Similarity 78.74
Matches 203; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Best_Local Similarity 80.0%
Matches 208; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           PRELIMINARY;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   SEQUENCE FROM N.A.
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447 EGERAMTKDNNLLGKFDLTGIPPAPRGVPQIEVTFDIDANGILNVSAVDKSTGKENKITI 506
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          121
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            623
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        387 SENVODLILLDVAPLSLGIETAGGVMTPLIKRNTTIPTKQTQIFTTYSDNQPGVLIQVYE
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                                                                              507 TNDKGRLSKDDIDRMVQEAEKYKAEDEANRDRVGAKNSLESYTYNMKQTVEDEKLKGKIS
                                                                                                                                                181 EADKKKYLDKCOEVISWLDANTLAEKDEFEHKRKELEQVCNPIISGLYQGAGGPGGFG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             GERAMIKDINILIGRFELSGIPPAPRGVPQIEVIFDIDANGILINVTATDKSTGKANKITIT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       447 GERAMTKDINILLGKFELAGIPPAPRGVPQVEVTFDIDANGILNVSAVDKSTGKENKITIT
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           2 SENVQDLLLLDVAPLSLGLETAGGVMTALIKRNSTIPTKQTQIFTTYSDNQPGVLIQVYE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Yokoyama Y., Hashimoto H., Kubota S., Kinoshita M., Toyohara H.,
Sakaguchi M., Tanaka M., Seikai T., Kanamori M.;
"CDNA cloning of heat-inducible HSP70, a 70.6 kDa heat shock protein,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Bukaryota; Metazoa; Chordata; Craniata; Vertebrata; Buteleostomi;
Actinopterygii; Neopterygii; Teleostei; Buteleostei; Neoteleostei;
Acanthomorpha; Acanthopterygii; Percomorpha; Pleuronectiformes;
Pleuronectoidei; Pazalichthyidae; Pazalichthys.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | Fisheries Sci. 64:564-568 (1998).
| Fisheries Sci. 64:564-568 (1998).
| -| SIMILARITY: Belongs to the heat shock protein 70 family. R EMBL, AB010871; BA31697.1; --
| R FMSL; AB010871; BA31697.1; --
| R FSSP; P08107; 1HJO.
| R FSSP; P08107; 1HJO.
| R GO; GO: 0005524; F:ATP binding; IEA.
| R InterPro; IPR00102; HSP70; 1.
| R PRODIC: PR00102; HSP70; 1.
| R PROSITE; PS00129; HSP70; 1.
| R PROSITE; PS00129; HSP70 - 1; 1.
| R PROSITE; PS00129; HSP70 - 2; 1.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          3;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        640 AA; 70608 MW; 9C8E65738F0CF705 CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Last sequence update)
Last annotation update)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              in Japanese flounder Paralichtys olivaceus.";
                                                                                                                                                                                                                                                                                                                                                                                                                                 640 AA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Paralichthys olivaceus (Japanese flounder)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Created)
                                                                                                                                                                                                                                                                                                                                                                                                                                 PRT;
                                                                                                                                                                                                                                                      241 AQGPKGGSGSGPTIEEVD 258
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                                                                                                                                                                                                                                                                                                      ------GPTIEEVD
                                                                                                                                                                                                                                                                                                                                                                                                                                                                              01-NOV-1998 (TrEMBLrel. 08, 01-NOV-1998 (TrEMBLrel. 08, 01-MAR-2004 (TrEMBLrel. 26,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ilarity 77.8%;
Conservative 3
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nes 200; Conserv
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093240
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   This SWISS-PROT entry is copyright. It is produced through a collaboration between the Swiss Institute of Bioinformatics and the EMBL outstation the Buropean Bioinformatics Institute. There are no restrictions on its use by non-profit institutions as long as its content is in no way modified and this statement is not removed. Usage by and for commercial entities requires a license agreement (See http://www.isb-sib.ch/announce/or send an email to license@lBb-sib.ch)
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                                                                                                                                                     181
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                                                                              427 GERAMTKDNNLLGKFELTGIPPAPRGVPQIEVTFDIDANGILNVSAVDKSTGKENKITIT
                                                                                                                                                                                KSENVQDLLLLDVTPLSLGIETAGGVMTALIKRNTTIPTKQTQTFTTYSDNQSSVLVQVY
SGNVQDLLLLDVARLSLGIETAGGVMTALIKRNTTIPTKQTQTFSTYSDNQPGVLIQVYE
                                               GERAMTKDNNLLGRFELSGIPPAPRGVPQIEVTFDIDANGILNVTATDKSTGKANKITIT
                                                                                                                                                   NDKGRLSKEEIERMVQEAEKYKAEDEVQRERVSAKNALESYAFNMKSAVEDEGLKGKISE
                                                                                                                                                                                                                                                      ADKKKVLDKCQEVISWLDANTLAEKDEFEHKRKELEQVCNPIISGLYQGAGGPGFGA
                                                                                                                                                                                                                                                                                 DDKKKVIEKCNEAVSWLENNQLADKEEYEHHLKELEKVCNPIITKLYQ--GGMPAGGCGA
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
Archosauria; Aves; Neognathae; Galliformes; Phasianidae; Phasianinae;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Morimoto R.I., Hunt C., Hung S.-Y., Berg K.L., Banerji S.S.,
"Organization, nucleotide sequence, and transcription of the chicken
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                10;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     HSP70 gene.";
J. Biol. Chem. 261:12692-12699(1986).
-!- SIMILARITY: Belongs to the heat shock protein 70 family.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           79.9%; Score 1050; DB 1; Length 634; 79.1%; Pred. No. 8.2e-57; ive 23; Mismatches 21; Indels 10
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               4270F7F08D365AEB CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            01-AUG-1988 (Rel. 08, Created)
01-AUG-1988 (Rel. 08, Last sequence update)
01-FEB-1994 (Rel. 28, Last annotation update)
date shock 70 kDa protein (HSP70).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        HSSP; P08109; 1CKR.
InterPro; IPR001023; H8p70.
Fam; PF00012; HSP70; 1.
PRINTS; PR00301; HEATSHOCK70.
PF0000m; PD000089; H8p70; 1.
PROSITE; PS00129; HSP70 1.
PROSITE; PS00129; HSP70 1; 1.
PROSITE; PS00129; HSP70 1; 1.
PROSITE; PS00129; HSP70 1; 1.
ATP-binding; Heat shock, Multigene family.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  634 AA.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  PRT;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                MEDLINE=86304452; PubMed=3017985;
                                                                                                                                                                                                                                                                                                                                                        QGPKGGSG---SGPTIEEVD 258
                                                                                                                                                                                                                                                                                                                                                                                               Q-TRGGSGPVLRGPTIEEVD 623
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               69750 MW;
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Matches 204; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                STANDARD;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  NCBI_TaxID=9031;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  CHICK
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  н
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HS70_CHICK
ID HS70_CHICK
ID HS70_CHICK
ID T 01-AUG-11
DT 01-AUG-11
DT 01-FB-11
CC Archosau
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01-APR-1990 (Rel. 14, Created)
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                                                                                                                                                                                         649 AA;
                                                                                                                                                                                                                       Local Similarity
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Balanus amphitrite (Barnacle).
Sukaryota; Metazoa; Arthropoda; Crustacea; Maxillopoda; Cirripedia;
Thoracia; Sessilia; Balanidae; Balanus.
NCBI_TaxID=32267;
                                                                                                                                                                                     Koike Y., Hanzawa K., Hara H., Hosomichi K., Yoshida Y., Watanabe Submitted (NOV-2002) to the EMBL/GenBank/DDBJ databases.
-!- SIMILARITY: Belongs to the heat shock protein 70 family.
EMBL; AB096696; BAC24791.1; -..
HSSP; P19120; 3HSC.
GO; GO:0005524; P:ATP binding; IEA.
GO; GO:0006957; P:Protein folding; IEA.
GO; GO:0006966; P:response to unfolded protein; IEA.
                                                                                                                                  Bukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
Archosauria; Aves; Neognathae; Galliformes; Numididae; Numida.
                                                                                                                                                                                                                                                                                                                                                                                                    10;
                                                                                                                                                                                                                                                                                                                                                                                 634;
                                                                                                                                                                                                                                                                                                                                                                                                     21; Indels
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                                                                                                                                                                                                                                                                                                                                                             69874 MW; 5DE4DC80CF407F0C CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          01-JUN-2003 (TrEMBLrel. 24, Created)
01-JUN-2003 (TrEMBLrel. 24, Last sequence update)
01-MAR-2004 (TrEMBLrel. 26, Last annotation update)
70kDa heat shock protein.
                                                                                  Last sequence update)
Last annotation update)
                                                                                                                                                                                                                                                                                                                                                                                79.8%; Score 1049; DB 2; 78.3%; Pred. No. 9.5e-57;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       649 AA
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                                                   634
                                                                                                                          guineafowl).
                                                                        Created)
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                                                                                                                                                                                                                                                                        InterPro; IPR001023; Hsp70.
Pfam; PP00012; HSP70; 1.
PRINTS; PR00301; HEATSHOCK70.
ProDom; PD000089; Hsp70; 1.
PROSITE; PS00297; HSP70 1: 1.
PROSITE; PS00329; HSP70 2; 1.
PROSITE; PS003039; HSP70 2; 1.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                241 AQGPKGGSGSGPTIEEVD 258
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624 SGHAGGNAOGPTIEEVD 640
                                                                    01-MAR-2003 (TrEMBLrel. 23, 01-MAR-2003 (TrEMBLrel. 23, 01-MAR-2004 (TrEMBLrel. 26,
                                                                                                                          Numida meleagris (Helmeted
                                                                                                                                                                                                                                                                                                                                                                                         Best Local Similarity 78.3
Matches 202; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      PRELIMINARY;
                                                  PRELIMINARY;
                                                                                                      Heat shock protein.
                                                                                                                                                                             SEQUENCE FROM N.A.
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                              RESULT 91
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443
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MEDLINE=90122930; PubMed=1689714; DOI=10.1016/0167-4781(90)90027-Y;
MEDLINE=90122930; PubMed=1688714; DOI=10.1016/0167-4781(90)90027-Y;
Misolation and mucleotide sequence analysis of the rat testis-specific major heat-shock protein (HSP70)-related gene.";
Biochim. Biophys. Acts 1048:93-99(1990).
-I-FUNCTION: In cooperation with other chaperones, Hsp70s stabilize preexistent proteins against aggregation and mediate the folding of newly translated polypeptides in the cytosol as well as within organelles. These chaperones participate in all these processes through their ability to recognize nonnative conformations of other proteins. They bind extended peptide segments with a net
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              01-APR-1990 (Rel. 14, Last sequence update)
05-UTL-2004 (Rel. 44, Last annotation update)
05-UTL-2014 (Rel. 44, Last annotation update)
Heat shock-related 70 kDa protein 2 (Heat shock protein 70.2) (Testis-
specific heat shock protein-related) (HST).
Name=HSpa2; Synonyms=HSt70;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  384 KSEAVQDLLLLDVTPLSLGIETAGGVMTAPIKRNTTIPTKQTÇTFTYSDNQPGVLIQVY
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    TNDKGRLSKEBIERMVQEAEKYKAEDEVQRERVSAKNALESYAFNMKSAVEDEGLKGKIS
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1 KSENVQDLLLLDVAPLSLGLETAGGVMTALIKRNSTIPTKQTQIPTTYSDNQPGVLIQVY
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Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
Mammalia; Eutheria; Rodentia; Sciurognathi; Muridae; Murinae; Rattus
Subcance From V.A.

Cheng S.H., So C.H., Chan P.K., Cheng C.W., Wu R.S.,
Submitted (SEP-2002) to the EMBL/GenBank/DDBJ databases.

C -!- SIMILARITY: Belongs to the heat shock protein 70 family.
EMBL, AY150182.

R GO, GO:0005524; F:ATP binding; IEA.

R GO; GO:0006554; F:ATP binding; IEA.

GO; GO:0006457; P:protein folding; IEA.

R GO; GO:000696; P:response to unfolded protein; IEA.

R InterPro; IPR001023; Hsp70.

R PERMYS; PR000101; HEATFHOCK70.

R PRIMYS; PR000101; HEATFHOCK70.

R PROSITE; PS00129; Hsp70; 1.

R PROSITE; PS00129; Hsp70-2; 1.

R PROSITE; PS01036; Hsp70-2; 1.

R PROSITE; PS01036; Hsp70-2; 1.
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ATP-binding
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DT 16-OCT

DT 28-FEB

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                                                                            This SWISS-PROT entry is copyright. It is produced through a collaboration between the Swiss Institute of Bioinformatics and the EMED utstation—the European Bioinformatics institute. There are no restrictions on its use by non-profit institutions as long as its content is in no way modified and this etatement is not removed. Usage by and for commercial entities requires a license agreement (See http://www.isb-sib.ch/announce/or send an email to license@isb-sib.ch).
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      polypeptides during translation
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Anopheles gambiae str. PEST
Bukaryota, Metazoa, Arthropoda, Hexapoda, Insecta, Pterygota,
Neoptera, Endopterygota, Diptera, Nematocera, Culicoidea, Anopheles.
NCBI_TaxID=180454,
hydrophobic character exposed by polypeptides during translation and membrane translocation, or following stress-induced damage. SIMILARITY: Belongs to the heat shock protein 70 family.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      11;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      DB 1; Length 633;
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01-MAR-2004 (TrEMBLrel. 26, Last sequence update)
01-MAR-2004 (TrEMBLrel. 26, Last annotation update)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  79.7%; Score 1047.5; DB 78.7%; Pred. No. 1.2e-56; iive 23; Mismatches 21
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            AgCP12309.
Name=agCG49697; ORFNames=ENSANGG0000017398;
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EMBL; AAAB01008987; EAA01046.1;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          621 -----GGSSGGPTIEEVD 633
                                                                                                                                                                                                                                       EMBL; X15705; CAA33735.1; -.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       241 AQGPKGGSGSGPTIEEVD
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InterPro; IPR001023; Hsp70.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Query Match
Best Local Similarity 78.7
Matches 203; Conservative
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This SWISS-PROT entry is copyright. It is produced through a collaboration between the Swiss Institute of Bioinformatics and the EMBL outstation -
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16-OCT-2001 (Rel. 40, Last sequence update)
28-FRB-2003 (Rel. 41, Last annotation update)
Heat shock 70 kDa protein cognate 4 (Hac 70-4).
Manduca sexta (Tobacco hawkmoth) (Tobacco hornworm).
Bukaryota, Metazoa, Arthropoda; Hexapoda; Insecta; Pterygota;
Neoptera; Endopterygota; Lepidoptera; Glossata; Ditrysia; Sphingiodea;
Sphingidae; Sphinginae; Manduca.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   SEQUENCE FROM N.A.

TISSUE=Prothoracic gland;

TISSUE=Prothoracic gland;

MEDLINE=20304587; PubMed=10844250; DOI=10.1016/S0965-1748(00)00031-X;

Rybczynski R., Gilbert L.I.;

"CDNA cloning and expression of a hormone-regulated heat shock protein (hsc 70) from the prothoracic gland of Manduca sexta.";

Insect Biochem. Mol. Biol. 30:579-589(2000).

-I. SUBCELLULAR LOCATION: Nuclear (By similarity).

-I. SUBCELLULAR Back Heat shock cognate proteins are expressed constitutively during normal development.

-I. SIMILARITY: Belongs to the heat shock protein 70 family.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      386 KSEEVQDLLLLDVTPLSLGIETAGGVMSVLIKRNTTIPTKQTQTFTTXSDNQPGVLIQVF
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         TNDKGRLSKEEI ERMVQEAEKYKAEDEVQRERVSAKNALESYAFNMKSAVEDEGLKGKI S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  EADKKKVLDKCQEVISWLDANTLAEKDEFEHKRKELEQVCNPIISGLYQGAGG-----PG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     1 KSENVQDLLLLDVAPLSLGLETAGGVMTALIKRNSTIPTKQTQIFTTYSDNQPGVLIQVY
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               EGERAMIKDNNLLGRFELSGIPPAPRGVPQIEVTFDIDANGILNVTATDKSTGKANKITI
                                                                                                                                                                                                                                                                                                                                                                                                                       Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                   13;
                                                                                                                                                                                                                                                                                                                                                        DB 2; Length 656;
                                                                                                                                                                                                                                                                                                                                                                                                                   Indels
                                                                                                                                                                                                                                                                                          OCBCFD5FC07B894A CRC64;
                                                                                                                                                                                                                                                                                                                                                     79.6%; Score 1045.5; DB 2; 77.1%; Pred. No. 1.6e-56; iive 22; Mismatches 27;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           236 -PGGF-GAQGPKG-----GSGSGPTIEEVD 258
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               GO; GO: 0005524; F:ATP binding; IEA.
InterPro; IRR001023; Hsp70.
Pfam; PP00112; HSP70; 1.
PRINTS; PR00301; HEATSHOCKTO.
ProDom; PD000089; Hsp70; 1.
PROSITE; PS00297; Hsp70; 1.
PROSITE; PS00329; HSP70_2; 1.
PROSITE; PS01036; HSP70_2; 1.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             EMBL; AF194819; AAF09496.1; -. HSSP; P19120; 3HSC.
                                                                                                                                                                                                                                                                                             656 AA; 71375 MW;
                                                                                                                                                                                                                                                                                                                                                                                                                       Matches 209; Conservative
                                                                                                                                                                                                                                                                                                                                                                                         Similarity
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Heat shock protein 70.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          NCBI_TaxID=8127;
                                                                                                                                                                      SEQUENCE
                                                                                                                                                                                                                                                                                                                                                                       121
                                                                                                                                                                                                  Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    073922;
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                                                                                                                                                                                   'n,
                                                                                                                                                                                                                                           443
                                                                                                                                                                                                                                                                      EGERAMIKDINILIGRFELSGIPPAPRGVPQIEVTFDIDANGILINVTATDKSTGKANKITI 120
                                                                                                                                                                                                                                                                                                                                                                                    237
                                                                                                                                                                                                                                                                                                                            TNDKGRLSKERIERWVQEARKYKAEDEVQRERVSAKNALESYAFNWKSAVEDEGLKGKIS 180
                                                                                                                                                                                                                                                                                                                                           504 TNDKGRLSKEEIERMYNEAEKYRNEDEKQKETIQAKNALESYCPNMKSTWEDEKLKDKIS 563
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            preexistent proteins against aggregation and mediate the folding of newly translated polypeptides in the cytosol as well as within organelles. These chaperones participate in all these processes through their ability to recognize nonnative conformations of other proteins. They bind extended peptide segments with a net hydrophobic character exposed by polypeptides during translation and membrane translocation, or following stress-induced damage. SIMILARITY: Belongs to the heat shock protein 70 family.
                                                                                                                                                                                                               KSENVQDLLLLDVAPLSLGLETAGGVMTALIKRNSTIPTKQTQIFTTYSDNQPGVLIQVY
                                                                                                                                                                                                                                       384 KSEEVODLLLDDVTPLSLGIETAGGVMTTLIKRNTTIPTKOTOTFTTYSDNQPGVLIQVF
                                                                                                                                                                                                                                                                                    EADKKKVLDKCQEVISWLDANTLAEKDEFEHKRKELEQVCNPIISGLYQGAGG-PG--PG
                                                                                                                                                                                   Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          mics 14:863-868(1992).
FUNCTION: In cooperation with other chaperones, Hsp70s stabilize
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
mammalia; Eutheria; Cetartiodactyla; Ruminantia; Pecora; Bovidae;
Bovinae; Bos.
                                                                                                                                                                                   11;
                                                                                                                                                       DB 1; Length 652;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           SEQUENCE FROM N.A.
MEDLINE=93122795; PubMed=1478667;
Grosz M.D., Womack J.E., Skow L.C.;
Grosz M.D., Womack J.E., Skow E.C.;
Grosz M.D., Womack J.E., Skow E.C.;
Gromics 14:863-868(1992).
          Pfam, PP00012; HSP70; 1.

PRINTS; PR00301; HEATSHOCK70.

ProDom; PD000089; HSP70; 1.

TIGRPAMs; TIGRO1991; HSCA; 1.

PROSITE; PS00297; HSP70_1; 1.

PROSITE; PS00329; HSP70_2; 1.

PROSITE; PS01036; HSP70_2; 1.

PROSITE; PS01036; HSP70_3; 1.

PROSITE; PS01036; HSP70_3; 1.

PROSITE; PS01036; HSP70_3; 1.

PROSITE; PS01036; HSP70_3; 1.
                                                                                                                                                      79.4%; Score 1043.5; DB 1; Length
76.2%; Pred. No. 2.2e-56;
ive 24; Mismatches 29; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   01-FEB-1994 (Rel. 28, Created)
01-FEB-1994 (Rel. 28, Last sequence update)
05-JUL-2004 (Rel. 44, Last annotation update)
Heat shock 70 kDa protein 3.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            631 AA
                                                                                                                                                                                                                                                                                                                                                                                                                                           GF-----GAQGPKGGSGSGPTIEEVD 258
                                                                                                                                                                                                                                                                                                                                                                                                                                                                     624 GMPGFPGGAPGAGGAAPGGGAGPTIEEVD 652
InterPro; IPR001023; Hsp70.
                                                                                                                                                                                Matches 205; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          STANDARD;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Name=HSP70-3;
Bos taurus (Bovine).
                                                                                                                                                                   Similarity
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P34933;
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441
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    180
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             562 DODKNKILDKCQEVINWLDRNQMAEKDEYEHKOKELERVCNPIISKLYQG----GPGGGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1 KSENVQDLLLLDVAPLSLGLETAGGVMTALIKRNSTIPTKQTQIPTTYSDNQPGVLIQVY
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   442 EGERAMTKONNILIGKFDLTGIPPAPRGVPQIEVTFDIDANGILNVTAADKSTGKENKITI
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MEDLINE-20291068; PubMed=10828441; DOI=10.1016/S0014-5793(00)01538-6; MOLINE-20291068; Probmed F., Mueller F., Iyengar A., Prunet P., Maclean N., Martial J.A., Muller M.
                                                                                                                                                                                                                                                                                                                                                                                                                      Gaps
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Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
Actinopterygii; Neopterygii; Teleostei; Euteleostei; Neoteleostei;
Acanthomorpha; Acanthopterygii; Percomorpha; Perciformes; Labroidei;
Cichlidae; Oreochromis.
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                                                                                                                                                                                                                                                                                                                                                                                                                      8;
                                                                                                                                                                                                                                                                                                                                                         79.4%; Score 1043; DB 1; Length 631; 78.3%; Pred. No. 2.2e-56; ive 24; Mismatches 24; Indels
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Submitted (AUG-1997) to the EMBL/GenBank/DDBJ databases.
L- SIMILARITY: Belongs to the heat shock protein 70 family.
EMBL; AD01312: TAR04673.1; -- HSSP; P08107; 1HJO.
                                                                                                                                                                                                                                                                              shock; Multigene family.; 01ACA20600C9322F CRC64;
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GO; GO:0006457; P:protein folding; IEA.
GO; GO:0006986; P:response to unfolded protein; IEA.
InterPro; IPR001023; Hsp70.
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Last annotation update)
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              241 AQGPKGGSGSGPTIEEVD 258
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              631 AA; 69199 MW;
                                                                                                     PRINTS; PRO0301; HEATSHOCK70.
ProDom; PD000089; Hsp70; 1.
TIGRFAMB; TIGR01991; HsCA; 1.
                                                                                                                                                                                      PROSITE; PS00297; HSP70 1; 1. PROSITE; PS00329; HSP70 2; 1. PROSITE; PS01036; HSP70 3; 1. ATP-binding; Chaperone; Heat
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      01-AUG-1998 (TrEMBLrel. 07, 01-AUG-1998 (TrEMBLrel. 07,
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                                           InterPro; IPR001023; Hsp70.
Pfam; PF00012; HSP70; 1.
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                                                                                                                                                                                                                                                                                                                                                                                         Best Local Similarity 78.3%
Matches 202; Conservative
EMBL; L10428; AAA30569.1;
HSSP; P19120; 3HSC.
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ATP-binding; Heat s
SEQUENCE 644 AA;
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                                                                                                                Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Local Similarity
ses 204; Conserv
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        NCBI_TaxID=7213;
                                                                                                                                         201;
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Best Local
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                                                                                                                                                                                                                                                                                                                                                         445
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                122 NDKGRLSKBEIERMVQEAEKYKAEDEVQRERVSAKNALESYAFNMKSAVEDEGLKGKISE 181
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   566 EDKKKKVVEKCDEAIAWLENNOLADKEEYQHKQXELEKVCNPIISKLYQG-GMPTGATCGE 624
                                                                                                                                                                                                                                                                                                                                                                                                   62 GERAMTKDNNLLGRFELSGIPPAPRGVPQIEVTFDIDANGILNVTATDKSTGKANKITIT 121
                                                                                                                                                                                                                                                                                                                                     386 SGNVQDLILLDVAPLSLGIETAGGVWTALIKRNTTIPTKQTQTFTTYSDNQPGVLIQVYE
                                                                                                                                                                                                                                                                                                                                                                                                                                   446 GERAMTKDNNLLGKFELTGIPPAPRGVPQIEVTFDVDANGILNVSAVDKSTGKENKITIT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           506 NDKGRLSKEEIEKAVQDAEKYKAEDDLQRDKIAAKNSIESYAFNAKSSVQDDNLKGKISE
                                                                                                                                                                                                                                                                                                           2 SENVODLLLLLDVAPLSLGLETAGGVMTALIKRNSTIPTKQTQIFTTYSDNQPGVLIQVYE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           182 ADKKKVLDKCQEVISWLDANTLAEKDEFEHKRKELEQVCNPIISGLYQGAGGPGPGFGA
                                                                                                                                                                                                                                                              Gaps
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STRAIN=ATCC CRL-1681;
Hargis M.T., Goff H., Dauble D.D., Howard S., Candido P., Hickey E.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Bukaryota, Metazoa, Chordata, Craniata, Vertebrata, Buteleostomi,
Actinopterygii, Neopterygii, Teleostei, Buteleostei,
Protacanthopterygii, Salmoniformes, Salmonidae, Oncorhynchus.
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                                                                                                                                                                                                             79.3%; Score 1042.5; DB 2; Length 639; 79.0%; Pred. No. 2.4e-56;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Weber L.A.; Submitted (OCT-1995) to the EMBL/GenBank/DDBJ databases.
                                                                                                                                                                                                                                                            23; Indels
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                                                                                                                                                                 70292 MW; B296FA98407BD4AE CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              01-NOV-1997 (Rel. 35, Created)
01-NOV-1997 (Rel. 35, Last sequence update)
05-ULJ-2004 (Rel. 44, Last annotation update)
Heat shock 70 kDa protein (HSP70).
                                                                                                                                                                                                                                                            28; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         PRT;
                   PRINTS; PR00301; HEATSHOCK70.
ProDom; PD000089; Hsp70; 1.
PROSITE; PS00229; HSP70 1; 1.
PROSITE; PS01029; HSP70 2; 1.
PROSITE; PS01036; HSP70 2; 1.
ATP-binding; Heat shock.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        QGPKGGSGSGPTIEEVD 258
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 625 QARAG--SQGPTIEEVD 639
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ProDom; PD000089; HSp70; 1.
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PROSITE; PS00297; HSP70_1; 1.
PROSITE; PS00329; HSP70_2; 1.
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HSSP; P08109; 1CKR.
InterPro; IPR001023; H8p70.
Pfam; PF00012; HSP70; 1.
                                                                                                                                                                                                                                   Best Local Similarity 79.0
Matches 203; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       STANDARD;
  PF00012; HSP70; 1
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        121 TNDKGRLSKEEIERMVQEAEKYKAEDEVQRERVSAKNALESYAFNMKSAVEDEGLKGKIS 180
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      625
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   386 KSENVQDLLLLDVAPLSLGIETAGGVMTALIKRNTTIPSKQTQTFTTYSDNQPGVMIQVY
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         181 EADKKKVLDKCQEVISWLDANTLAEKDEFEHKRKELEQVCNPIISGLYQGAGGP-GPGGF
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                                                                                                                                                                                                                                                                                                                              Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Thanaphum S., Haymer D.S.; "A member of the hsp70 gene family from the Mediterranean fruit fly,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  12;
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Neoptera; Endopterygota; Diptera; Brachycera; Muscomorpha;
Tephritoidea; Tephritidae; Ceratitis.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Theochemic of the state of the 
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                                                                                                                                                                                                           79.3%; Score 1042.5; DB 1; Length 77.6%; Pred. No. 2.4e-56; ive 30; Mismatches 27; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Indels
PROSITE; PSO1036; HSP70_3; 1.
ATP-binding; Heat shock; Multigene family.
SEQUENCE 644 AA; 70976 MW; 25D5C8AA2464B939 CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        71194 MW; 0745A6AC1041FAFC CRC64;
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01-NOV-1996 (TrEMBLrel. 01, Last sequence update)
01-NAV-2004 (TrEMBLrel. 26, Last annotation update)
Ceratitis capitata heat shock-like protein.
Ceratitis capitata (Mediterranean fruit fly).
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PRINTS; PR00301; HEATSHOCK70.
PROSITE; PS00297; HSP70_1; 1.
PROSITE; PS01036; HSP70_2; 1.
PROSITE; PS01036; HSP70_3; 1.
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TNDKGRLSKEEIERMVQEAEKYKAEDEVQRERVSAKNALESYAFNMKSAVEDEGLKGKIS 180
                                                                                                                  TNDKGRLSKEEIERMVQEAEKYKAEDEVQRERVSAKNALESYAFNMKSAVEDEGLKGKIS 180
                                                                                                                                                                                                                                                                        EADKKKVLDKCQEVISWLDANTLAEKDEFEHKRKELEQVCNPIISGLYQGAGG-----PG 235
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                                                                                                                                                                  504 TNDKGRLSKEDIERWYNEAEKYRSEDEKQKETIAAKNSLESYCFNMKATLDEENMYTKIS
                                                                                                                                                                                                                                                                                                                TNDKGRLSKEDIERMYNEAEKYRNEDDAQKERITAKNGLESYCFNMKSTMEDEKLKDKIS
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"Cloning and characterization of a 70 kDa heat shock cognate gene.
"(HSC70) From two species of Chironomus.";
Insect Mol. Biol. 12:19-26(2003).
-I. SIMILARITY: Belongs to the heat shock protein 70 family.
EMBL; AF448433; AAN14525.1; -.
GO; GO:0005524; F:ATP binding; IEA.
GO; GO:0005524; F:ATP binding; IEA.
GO; GO:0006857; P:protein folding; IEA.
GO; GO:0006866; P:response to unfolded protein; IEA.
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           01-MAR-2003 (TrEMBLrel. 23, Created)
01-MAR-2003 (TrEMBLrel. 23, Last sequence update)
01-MAR-2004 (TrEMBLrel. 26, Last annotation update)
101-MAR-2004 (TrEMBLrel. 26, Last annotation update)
101-MAR-2004 (TrEMBLrel. 26, Last annotation update)
102-MAR-2004 (Midge).
103-MAR-2004 (Midge
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                  650 AA
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Best Local Similarity 76.1
Matches 204; Conservative
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PRINTS; PR00301; HEATS
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Db 623 NFPGAPGAGAGPTPGAGSGSGPTIEEVD 650
Search completed: April 6, 2005, 17:24:15
Job time: 205 secs

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1 KSENVQDLLLLDVAPLSLGL.....FGAQGPKGGSGSGPTIEEVD 258
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                       GenCore version 5.1.6
Copyright (c) 1993 - 2005 Compugen Ltd
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Listing first 100 summaries
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ALIGNMENTS

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C;Accession: S53357
R;Gutierrez, J.A.; Guerriero Jr., V.
B;bchem. J. 305, 197-203, 1995
A;Title: Chemical modifications of a recombinant bovine stress-inducible 70 kDa heat-shoc A;Reference number: S53357; MUID:95126904; PMID:7826329
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         A;Residues: 1-641 <GUT>
A;Cross-references: UNIPROT:Q27975; EMBL:U09861; NID:g497937; PIDN:AAA73914.1; PID:g49792C
C;Genetics:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        A; Description: involved in protein folding and assembling/disassembling of protein comple
C; Superfamily: heat shock protein 70
C; Keywords: ATP; molecular chaperone
      A, Accession: 137562
A, Accession: 137562
A, Status: translation not shown; translated from GB/EMBL/DDBJ
A, Status: translation not shown; translated from GB/EMBL/DDBJ
A, Residues: 616-640 < RE2>
A, Residues: 616-640 < RE2>
A, Cross-references: EMBL:X04677; NID:g32482; PIDN:CAA28382.1; PID:g32483
C, Ganetics:
A, Gene: GDB:HSPAlL; HSP70-HOM
A, Cross-references: GBB:120058; OMIM:140559
A, Map position: 6p21.3-6p21.3
A, Introns: #status absent
C, Function: involved in protein folding and assembling/disassembling of protein compl C, Superfamily: heat shock protein 70
C; Keywords: ATP; molecular chaperone
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     dnaK-type molecular chaperone hsp70 - bovine
N;Alternate names: 70K heat shock protein
C;Species: Bos primigenius taurus (cattle)
C;Date: 05-Dec_1998 #sequence_revision 05-Dec-1998 #text_change 09-Jul-2004
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1 KSENVQDLLLLDVAPLSLGLETAGGVMTALIKRNSTIPTKQTQIFTTYSDNQPGVLIQVY
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       181 EADKKKYLDKCQEVISWLDANTLAEKDEFEHKRKELEQVCNPIISGLYQGAGGPGGFG
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-references: EMBL:X04676; NID:g32480; PIDN:CAA28381.1;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Score 1298.5; DB 2;
Pred. No. 1.2e-76;
0; Mismatches 0;
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Best Local Similarity 99.6%;
Matches 257; Conservative
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A,Status: preliminary
A,Molecule type: mRNA
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C; Function:
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                                                                                                                           Additional of the molecular chaperone HSP70-1 - human dnak-type molecular chaperone HSP70-1 - human Nalternate names: heat shock protein HSP70-1 C;Species: Homo sapiens (man) C;Decies: Homo sapiens (man) C;Decies: Homo sapiens (man) C;Decies: Homo sapiens (man) C;Date: 03-Mar-1994 #sequence_revision 03-Mar-1994 #text_change 09-Jul-2004 C;Accession: A48871 R;Milner, C.M.; Campbell, R.D. Immunogenetics 32, 242-251, 1990 A;Title: Structure and expression of the three MHC-linked HSP70 genes. A;Reference number: A48871; MUID:91055806; PMID:1700760 A;Accession: A48871 A;Status: preliminary A;Molecule: Type: DNA A;Residues: J-641 cMIL> A;Status: preliminary A;Molecule: Type: DNA A;Residues: UniPROT:P08107; GB:M59828; GB:M34267; NID:gl88487; PIDN:AAA63226.1; C;Function: involved in protein folding and assembling/disassembling of protein compl C;Superfamily: heat shock protein 70 C;Superfamily: heat shock protein 70 C;Superfamily: heat shock protein 70 C;Superfamily: Apple 2012 C;Superfamily: Apple 2012 C;Superfamily: Marking A;Decinar chaperone
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ilarity 100.0%; Pred. No. 1.2e-77;
Conservative 0; Mismatcher
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Matches 258; Conserv
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A;Molecule type: DNA
A;Residues: 1-641 <WAL1>
A;Cross-references: UNIPROT:Q07439; UNIPROT:Q63256; EMBL:X77207; NID:g1814000; PIDN:CAAS
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C;Superfamily: heat shock protein 70
C;Keywords: ATP; molecular chaperone
N.Alternate molecular chaperone hsp70 - pig
N.Alternate names: heat shock protein hsp70
C;Species: Sus scrofa domestica (domestic pig)
C;bate: 09-bec-1993 #sequence_revision 26-May-1995 #text_change 09-Jul-2004
C;Accession: 835718
R;Peelman, L.J.; van de Weghe, A.R.; Coppieters, W.R.; Van Zeveren, A.J.; Bouquet, Y.H.
Immunogenetics 35, 286-289, 1992
A;Title: Complete nucleoride sequence of a porcine HSP70 gene.
A;Reference number: 835718; MUID:92175874; PMID:1339404
A;Accession: 835718
A;Gratus: translation not shown
A;Residues: 1-6.**
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M.Alternate names: dnaK-type molecular chaperone HSP701b; heat shock protein 70
C;Species: Rattus norvegicus (Norway rat)
C;Species: Rattus norvegicus (Norway rat)
C;Species: O2-Mug-1996 #sequence revision 02-Aug-1996 #text_change 09-Jul-2004
C;Accession: 155542; 168986; 543388; 847522; 156574; 835955; 838199; 841413; 841414
R;Walter, L.; Rauh, F.; Gunther, B.
Immunogenetics 40, 325-330, 1994
A;Title: Comparative analysis of the three major histocompatibility complex-linked heat
A;Reference number: 154542; MUID:95012453; PMID:7927536
A;Accession: 154542
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llarity 97.3%; Pred. No. 2.3e-75;
Conservative 2; Mismatches 5;
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A;Status: preliminary; translated from GB/EMBL/DDBJ
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A;Cross-references: UNIPROT:P34930; EMBL:M69100
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Best Local Simi
Matches 251;
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dnaK-type molecular chaperone hsp70 - green monkey
dnaK-type molecular chaperone hsp70 - green monkey
N;Alternate names: heat shock protein 70
C;Species: Cercopithecus aethiops (green monkey, grivet)
C;Species: Carcopithecus aethiops (green monkey, grivet)
C;Accession : 33.766; 136927
R;Sainis, I.; Angelidis, C.; Pagoulatos, G.; Lazaridis, I.
R;Sainis, I.; Angelidis, C.; Pagoulatos, G.; Lazaridis, I.
R;Bainis, I.; Angelidis, C.; Pagoulatos, G.; Lazaridis, I.
R;Bainis, I.; Angelidis of the Library, January 1993
A;Bescription: Nucleotide sequence of the CDNA encoding a monkey 70kd heat shock protein
A;Reference number: S31766
A;Accession: S31766
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   A; Molecule type: mRNA
A; Residues: 1-638 < SAI: A
A; Residues: 1-638 < SAI: A
A; Creatines: UNIPROT: Q28222
B; Sainis, I.; Angelidis, C.; Pagoulatos, G.; Lazaridis, I.
FEBS Lett. 355, 282-286, 1994
A; Title: The hscroo gene which is slightly induced by heat is the main virus inducible me
A; Reference number: 136927; MUID: 95080396; PMID: 7988690
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C.Function:
A.Decription: involved in protein folding and assembling/disassembling of protein compl
C.Superfamily: heat shock protein 70
C.Keywords: ATP; molecular chaperone
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                                                                                                                     TNDKGRLSKEEIERMVQEAEKYKAEDEVQRERVSAKNALESYAFNMKSAVEDEGLKGKIS 180
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                                       TNDKGRLSKEEIERMYQEAEKYKAEDEVQRERVSAKNALESYAFNMKSAVEDEGLKGKIS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  EADKKKVLDKCQEVISWLDANTLAEKDEFEHKRKELEQVCNPIISGLYQGGGGGGGFGFG
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A;Molecule type: mRNA
A;Residues: 1-638 <RES>
A;Cross-references: EMBL:X70684; NID:g22781; PIDN:CAA50019.1; PID:g22782
A;Experimental source: kidney; cell line COS-1
C;Genetics:
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                                                                                                                                                                                                                                                                                                                                                            624 AQGPKGSGSGPTIEEVD 641
                                                                                                                                                                                                                                                                                                                        241 AOGPKGGSGSGPTIEEVD 258
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Gaps

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Indels

Length 642;

563

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DNA complementary to three mouse Mr=68,000 he PMID:2868009
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A;Note: the authors translated the codon CTG for residue 173 as Val and CGC for residue
                                                                                                                                            A.Description: involved in protein folding and assembling/disassembling of protein compl C,Superfamily: heat shock protein 70
C;Keywords: ATP; molecular chaperone
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           C;Date: 19-Nov-1988 #sequence_revision 19-Nov-1988 #text_change 09-Jul-2004
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                                            A,Residues: 1-642 <HUN>
A,Cross-references: GB:M35021; NID:g194022; PIDN:AAA37864.1; PID:g387211
A,Experimental source: strain AJ
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                                                                                                                                                                                                                                                            93.5%; Score 1228.5; DB 2; 93.1%; Pred. No. 4.2e-72; iive 11; Mismatches 6;
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                                                                                                                                                                                                                                                                                   Similarity 93.1%; Pred. No. 4.ze
11; Conservative 11; Mismatches
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68
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                R;Lowe, D.G.; Moran, L.A.
J. Biol. Chem. 261, 2102-2112, 1986
A;Title: Checular cloning and analysis of
A;Reference number: A26283; MUID:86111900;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            dnaK-type molecular chaperone - mouse N;Alternate names: heat shock protein (C;Species: Mus musculus (house mouse)
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Matches 237; Conservative
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A; Residues: 1-420 <LOW>
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A, Residues: 1-70, NG', 73-407, 'A', 409-641 <LIS>
A, Cross-references: EMBL:X74271; NID:G3411498; PIDN:CAA52328.1; PID:G396270
A, Cross-references: EMBL:X74271; NID:G3411498; PIDN:CAA52328.1; PID:G396270
A, Note: the authors translated the codon CCG for residue 365 as Asp
R, Longo, F.M.; Wang, S.; Narasimhan, P.; Zhang, J.S.; Chen, J.; Massa, S.M.; Sharp, F.R.
A, Neurosci. Res. 36, 325-335, 1993
A, Title: CDNA cloning and expression of stress-inducible rat hsp70 in normal and injured
A, Reference number: 156574; MUID:94096443; PMID:8271311
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     A;Description: involved in protein folding and assembling/disassembling of protein compl
C;Superfamily: heat shock protein 70
C;Keywords: ATP; heat shock; molecular chaperone; stress-induced protein
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A;Title: Characterization and sequence of a mouse hsp70 gene and its expression in mouse
A;Reference number: JH0095; MUID:90236310; PMID:2332169
                                                                        and its expr
                                                                                                                                                                     A;Residues: 1-70, NG', 73-109, K',111-203, TR',205-261, P',263,'ADGV',268-641 <MES>A;Cross-references: EMBL:X75357; NID:g407163; PIDN:CAA53140.1; PID:g407164
A;Experimental source: ischaemic rat heart
R;Lisowska, K.; Widlak, W.; Krawczyk, Z.; Wolniczek, P.; Wisniewski, J.
Biochim. Biochim. Biophys. Acta 1219, 64-72, 1994
A;Title: Cloning, nucleotide sequence and expression of rat heat inducible hsp70 gene. A;Reference number: S47522; MUID:94368874; PMID:8086479
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NiAlternate names: heat shock protein 70
Cispecies: Mus musculus (house mouse)
Cispecies: Mus musculus (house mouse)
Cipate: 31-Dec-1990 #sequence_revision 31-Dec-1990 #text_change 20-Aug-1999
Circossion: JH0095
RiHunt, C.; Calderwood, S.
RiHunt, T.; 199-204, 1990
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          1 KSENVODLLLLDVAPLSLGLETAGGVMTALIKRNSTIPTKQTQIFTTYSDNQPGVLIQVY
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A;Residues: 1-226,'D',228-641 <LON>
A;Cross-references: GB:L16764; NID:g294567; PIDN:AAA17441.1; PID:g294568
                                                                        protein (HSP70)
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  5; Indels
R; Mestril, R.; Chi, S.H.; Sayen, M.R.; Dillmann, W.H. Biochem. J. 298, 561-569, 1994
A; Title: Isolation of a novel inducible rat heat-shock E A; Reference number: S43388; MUID:94190258; PMID:8141767
A; Accession: S43388
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               DB 2;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Score 1258; DB 2;
Pred. No. 5.2e-74;
7; Mismatches 5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Status: preliminary; translated from GB/EMBL/DDBJ
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ilarity 95.3%;
Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Best Local Similarity
Matches 246; Conserv
                                                                                                                                                       A; Molecule type: DNA
A; Residues: 1-70,'NG'
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     A; Accession: I56574
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   C;Genetics: <HSP1>
A;Gene: hsp70.1
C;Genetics: <HSP2>
A;Gene: hsp70.2
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                                                                                                                                                                                                                                                                                                                                                                         A;Accession: S47522
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120

222

9

Gaps

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IndelB

282

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dnak-type molecular chaperone hsc73 - mouse
MyAlternate names: heat-shock protein 73
C;Species Mus musculus (house mouse)
C;Species Mus musculus (house mouse)
C;Date: 15-Aug-1996 #sequence_revision 18-Oct-1996 #text_change 09-Jul-2004
C;Accession: JG4853
R;Soulier: S: Vilotte, J.L.; L'Huillier, P.J.; Mercier, J.C.
Gene 172, 285-289, 1996
A;Title: Developmental regulation of murine integrin betal subunit- and Hsc73-encoding g
A;Reference number: JG4853; MUID:96269419; PMID:8682318
A;Accession: JG4853.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        A;Molecule type: mRNA
Akeaidues. 1-646 cSOU-
A;Cross-references: UNIRROT:P08109; GB:U27129; NID:9861212; FIDN:AAG52836.1; PID:9861213
C;Comment: This protein plays a role during mammogensis and is involved in the control o
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 protein compl
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                  A, Description: involved in protein folding and assembling/disassembling of C, Superfamily: heat shock protein 70
C, Keywords: ATP; mammary gland; molecular chaperone
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    504 TNDKGRLSKEDIERWVQEAEKYKAEDEKQRDKVSSKNSLESYAFNWKATVEDEKLQGKIN
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    384 KSENVODLLLLDVTPLSLGIETAGGVMTVLIKRNTTIPTKQTQTFTTYSDNQPGVLIQVY
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                                                                                                                                                                               1 KSENVQDLLLLDVAPLSLGLETAGGVMTALIKRNSTIPTKQTQIFTTYSDNQPGVLIQVY
                                                                                                                                                                                                                                                                                                                                               444 EGERAMTKONNLLGKFELTGIPPAPRGVPQIEVTFDIDANGILNVSAVDKSTGKENKITI
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                                                                                                                         Indels
                                                            DB 2;
                                                                                                                      20;
                                                         Query Match
83.8%; Score 1100.5; DB
Best Local Similarity 81.7%; Pred. No. 8.2e-64;
Matches 215; Conservative 23; Mismatches 20
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               624 GFPGGGAPPSGGASSGPTIEEVD 646
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               -- GAQGPKGGSGSGPTIEEVD
   C; Keywords: ATP; molecular chaperone
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dnak-type molecular chaperone - Chinese hamster

Natlernate names: heat shock cognate protein 70

C;Species: Cricetulus griseus (Chinese hamster)

C;Species: Cricetulus griseus (Chinese hamster)

C;Species: Cricetulus griseus (Chinese hamster)

C;Date: 09-Nov-1990 #sequence_revision 09-Nov-1990 #text_change 09-Jul-2004

C;Accession: A35922

R;Ahmad, S; Ahuja, R; Venner, T.J.; Gupta, R.S.

Mol. Cell. Biol. 10, 5160-5165, 1990

A;Title: Identification of a protein altered in mutants resistant to microtubule inhibit

A;Reference number: A35922

A;Reference number: A35922

A;Relatus: preliminary

A;Molecule type: mRNA

A;Residues: 1-646 AAIMA

A;Residues: 1-646 AAIMA

A;Cross-references: UNIPROT:P19378; GB:M34561; NID:g191117; PIDN:AAA36991.1; PID:g304516

C;Function:

A;Description: 'involved in protein folding and assembling/disassembling of protein compl

C;Superfamily: heat shock protein 70
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        C;Function:
A;Description: involved in protein folding and assembling/disassembling of protein compl
C;Superfamily: heat shock protein 70
C;Keywords: AFP; molecular chaperone
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   402
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                                                                                                                                                                                                                                                               diak-type molecular chaperone hsp72-ps1 - rat
C;Species: Rattus norregicus (Norway rat)
C;Accession: 160329; 831716
R;Walter, L.; Heine, L.; Gunther, E.
Immunogenetics 39, 351-354, 1994
A;Reference number: 160329; MUID:9422444; PMID:7545923
A;Accession: 160329
A;Status: preliminary; translated from GB/EMBL/DDBJ
A;Roccession: 160329
A;Roccessio
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              884 KSENVQDLLLLDVTPLSLGIETAGGVMTVLIKRNTTIPTKQTQTFTTYSDNQPGVLIQVY
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C;Genetics:
A;Gene: hsp72-ps1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               2;
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81.7%; Pred. No. 8.2e-64;
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                                                                                            241 AQGPKGGSGSGPTIEEVD
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Query Match
Best Local Similarity 81.79
Matches 215; Conservative
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Cispecies: Homo sapiens (man)
Cispecies: Homo sapiens (man)
Cipate: 19-Nov-1988 #sequence_revision 19-Nov-1988 #text_change 09-Jul-2004
Cipate: 19-Nov-1988 #sequence_revision 19-Nov-1988 #text_change 09-Jul-2004
Cipate 270777
Ribworniczak, B.; Mirault, M.E.
Ribworniczak, B.; Mirault, M.E.
Aireleis Stanciure and expression of a human gene coding for a 71 kd heat shock 'cognate A;Reference number: A27077; MUID:87259994; PMID:3037489
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                                                                                                                                                                                                                                                                                                               A; Description: involved in protein folding and assembling/disassembling of protein compl C; Superfamily: heat shock protein 70 C; Keywords: ATP; molecular chaperone
                                                                                                                                                                                                                                                                   GB:M34268; NID:g188491; PIDN:AAA63228.1;
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03-Mar-1994 #sequence_revision 03-Mar-1994 #text_change 09-Jul-2004
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1 KSENVQDLLLLDVAPLSLGLETAGGVMTALIKRNSTIPTKQTQIFTTYSDNQPGVLIQVY
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                                                                                                                                                                                                                                                                                                                                                                                                                              Length 641;
                           C,Accession: B45871
R,Milner, C.M.; Campbell, R.D.
Immunogenetics 32, 242-251, 1990
A;Title: Structure and expression of the three MHC-linked HSP70
A;Reference number: A45871; MUID:91055806; PMID:1700760
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                A; Introns: 69/1; 137/3; 188/3; 374/1; 441/3; 508/1; 585/3
                                                                                                                                                                                                                                                                                                                                                                                                                           Query Match 83.6%; Score 1099; DB 2; Best Local Similarity 81.9%; Pred. No. 1e-63; Matches 217; Conservative 16; Mismatches 16;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 dnaK-type molecular chaperone - human
N;Alternate names: heat shock cognate protein 70
                                                                                                                                                                                                                                                                   A; Cross-references: UNIPROT: P34931; GB:M59829;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   A; Cross-references: UNIPROT: P11142; GB:M19141
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                241 AQGPKGGSG-----SGPTIEEVD 258
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                                                                                                                                                                                                                                                   A; Residues: 1-641 <MIL>
                                                                                                                                                                     A,Accession: B45871
A,Status: preliminary
A,Molecule type: DNA
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Gardy Table and the chaperone has 73 - rat

Miletrante names: heat shock cognate protein has 70; heat shock cognate protein has 73

Gardy Table and the chaperone has 73 - rat

NiAlternate names: heat shock cognate protein has 70; hiternate names: heat shock cognate protein has 73

C.Species: Rattus norvegicus (Norway rat)

C.Species: Rattus norvegicus (Norway rat)

C.Date: 29-Jan-1993 #sequence revision 29-Jan-1993 #text_change 09-Jul-2004

C.Date: 29-Jan-1993 #sequence revision of a gene encoding has 73; the major hap 70-11ke protein in A. Reference number: 807197; MUID: 87246537; PMID: 3595567

A.Title: Consider and expression of a gene encoding has 73; the major hap 70-11ke protein in A. Reference number: 807197; MUID: 87246537; PMID: 3595567

A.Molecule type: DNA

A.Molecule type: DNA

A.Molecule type: DNA

A.Molecule type: DNA

A.Molecule type: MINA

A.Molecule type: 
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81.7%; Pred. No. 8.2e-64;
iive 23; Mismatches 20,
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                   646
                GFPGGGAPPSGGASSGPTIEEVD
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Best Local Similarity 81.7%
Matches 215; Conservative
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C;Accession: S11456
R;Debuca-Flaherty, C.; McKay, D.B.
Nucleic Acids Res. 18, 5569, 1990
A;Title: Nucleotide sequence of the cDNA of a bovine 70 kilodalton heat shock cognate pr
A;Reference number: S11456; MUID:91016866; PMID:2216746
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      A;Residues: 1-641 <RES>
A;Cross-references: UNIPROT:P16627; GB:L27086; NID:g457299; PIDN:AAA59362.1; PID:g457300
C;Genetics:
                                                                                                                                                                                                                                                                                                                                                                                                                             dhak-type molecular chaperone H8C70t - mouse
NiAlternate names: heat shock protein 70
C;Species: Mus musculus (house mouse)
C;Date: 02-Aug-1996 #sequence_revision 02-Aug-1996 #text_change 09-Jul-2004
C;Accession: I49761
C;Accession: I49761
Immunogenetics 40, 159-162, 1994
A;Title: Coding sequences and levels of expression of H8C70t are identical in mice with A;Reference number: I49761; MUID:9429288; PMID:8026864
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             A;Description: involved in protein folding and assembling/disassembling of protein compl C;Superfamily: heat shock protein 70 C;Keywords: ATP; molecular chaperone
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                              INDKGRISKEEIERMVQEAEKYKAEDEVQRERVSAKNALESYAFNMKSAVEDEGLKGKIS 180
                                                                                                                                    121 TNDKGRLSKEEIERMVQEAEKYKAEDEVQRERVSAKNALESYAFNMKSAVEDEGLKGKIS 180
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                                                             386 KSEKVQDLLLLDVAPLSLGLETAGGVMTVLIKRNSTIPTKQTQIFTTYSDNQPGVLIQVY
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N;Alternate names: heat shock cognate protein, 79K
C;Species: Bos primigenius taurus (cattle)
C;Species: 21-Nov-1993 #sequence_revision 10-Nov-1995 #text_change 09-Jul-2004
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   21;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           83.1%; Score 1092; DB 2;
ilarity 84.5%; Pred. No. 2.9e-63;
Conservative 17; Mismatches 21;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         A,Status: preliminary, translated from GB/EMBL/DDBJ
A,Molecule type: DNA
                                                                                                                                                                                                                                                                           238 GF--GAQGPKGGSGSGPTIEEVD 258
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            241 AQGPKGGSGSGPTIEEVD 258
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              GYTP-GRAATGPTIEEVD 641
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Best Local Similarity
Matches 218; Conserv
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N;Alternate names: heat shock cognate protein hac70
C;Species: Mus musculus (house mouse)
C; Species: Mus musculus (house mouse)
C; Date: 30-Sep-1993 #sequence revision 26-May-1994 #text change,09-Jul-2004
C;Accession: A45935; A44262; S50895; S12830; S12831; S12832
C;Accession: A45935; A44262; S50895; S12830; S12831
S;Giebel, L.B.; Dworniczak, B.P.; Bautz, B.K.F.
Dev. Biol. 125, 200-207, 1988
A;Title: Developmental requlation of a constitutively expressed mouse mRNA encoding a 72
A;Reference number: A45935; MUID:88055872; PMID:3334718
A;Accession: A45935
A;Status: preliminary
A;Molecule type: mRNA
A;Residues: 1.646 cdIE>
A;Residues: 1.646 cdIE>
A;Cross-references: UNIPROT:P08109; GB:M19141; NID:g194034; PIDN:AAA37869.1; PID:g309319
A;Cross-references: UNIPROT:P08109; GB:M19141; NID:g194034; PIDN:AAA37869.1; PID:g309319
A;Octe: the authors translated the codon GAT for residue 97 as Asn
B;Imamoto, N.; Matsuoka, Y.; Kurihara, T.; Kohno, K.; Miyagi, M.; Sakiyama, F.; Okada, Y. J. Cell Biol. 119, 1047-1061, 1992
A;Itle: Antibodies against 70-kD heat shock cognate protein inhibit mediated nuclear in A;Reference number: A44262; MUID:93077667; PMID:1332978
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C; Superfamily: heat shock protein 70
C; Keywords: ATP; molecular chaperone
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   A; Molecule type: DNA
A; Residues: 438-452 < MAX>
A; Residues: 438-452 < MAX>
A; Crose-references: EMBL:X54402; NID:g55073; PIDN:CAA38268.1; PID:g55074
R; Liu, J.; Maxwell, E.S.
Nucleic Acids Res. 18, 6565-6571, 1990
A; Title: Mouse U14 snRNA is encoded in an intron of the mouse cognate hsc70 heat shock
A; Reference number: $12830; MUID:91067440; PMID:2251119
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         m
                                                     TNDKGRLSKEEIERMVQEAEKYKAEDEVQRERVSAKNALESYAFNMKSAVEDEGLKGKIS 180
                                                                              EADKKKVLDKCQEVISWLDANTLAEKDEFEHKRKELEQVCNPIISGLYQGAGG-PG--PG 237
                                                                                                                                                                                      564 DEDKQKILDKCNEIINWLDKNQTAEKEEFEHQQKELEKVCNPIITKLYQSAGGMPGGMPG 623
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  444 EGERAMTKDNNLLGKFELTGIPPAPRGVPQIEVTFDIDANGILNVSAVDKSTGKENKITI 503
EGERAMTKONNLLGKFELTGIPPAPRGVPQIEVTFDIDANGILNVSAVDKSTGKENKITI
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         KSENVQDLLLLDVAPLSLGLETAGGVMTALIKRNSTIPTKQTQIFTTYSDNQPGVLIQVY
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           A;Molecule type: protein
A;Residues: 89-102;160-187;272-282;575-583;610-638 <IMA>
R;Maxwell, E.S.
aubmitred to the EMBL Data Library, August 1990
A;Reference number: S50895
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Best Local Similarity 81.4%; Pred. No. 2e-63;
Matches 214; Conservative 23; Mismatches 2
                                                                                                                                                                                                                                                                                                       GF--GAQGPKGGSGSGPTIEEVD 258
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  A;Accession: S12830
Molecule type: DNA
A;Readudes: 333-283;438-452;580-587 <LIU>
A;Cross-references: EMBL:X54401
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       A; Introns: 374/1; 441/3; 585/3 C; Function:
                                                                                                                                                                                                                                                                     238
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237

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A;Molecule type: DNA
A;Residues: 1-651 <ZAF>
A;Cross-references: UNIPROT:P08108; EMBL:S85730; NID:G246718; PIDN:AAB21658.1; PID:G24671
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    A; Description: involved in protein folding and assembling/disassembling of protein comple C; Superfamily: heat shock protein 70 C; Keywords: ATP; molecular chaperone
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             R;Zafarullah, M.; Wisniewski, J.; Shworak, N.W.; Schieman, S.; Misra, S.; Gedamu, L. Bur. J. Biochem. 204, 893-900, 1992
A;Title: Molecular cloning and characterization of a constitutively expressed heat-shock A;Reference number: S21175; MUID:92174952; PMID:1371753
                                                                                                                                                                                                                                                         444 EGERAMTKDNNLLGKFELTGIPPAPRGVPQIEVTFDIDANGIMNVSAADKSTGKENKITI 503
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 TNDKGRLSKEEIERMVQEAEKYKAEDEVQRERVSAKNALESYAFNMKSAVEDEGLKGKIS 180
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          EADKKKVLDKCQEVISWLDANTLAEKDEFEHKRKELEQVCNPIISGLYQGAGG-PG---- 235
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NiAlternate names: heat shock cognate protein 70
C;Species: Brugia pahangi
C;Species: Brugia pahangi
C;pate: 30-Sep-1993 #sequence_revision 30-Sep-1993 #text_change 09-Jul-2004
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             N;Alternate names: heat shock cognate protein 71
C;Species: Oncorhynchus mykiss (rainbow trout)
C;Date: 19-Mar-1997 #sequence_revision 19-Mar-1997 #text_change 09-Jul-2004
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         TNDKGRLSKERIERMVQEAEKYKAEDEVQRERVSAKNALESYAFNMKSAVEDEGLKGKIS
                                                                                                                                                                                                                                 EADKKKVLDKCOEVISWLDANTLAEKDEFEHKRKELEQVCNPIISGLYQ-GAGGP--GPG
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                                             EGERAMTKDNNLLGRFELSGIPPAPRGVPQIEVTFDIDANGILAVTATDKSTGKANKITI
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   A;Introns: 69/1; 137/3; 188/3; 374/1; 441/3; 508/1; 585/3
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        dnaK-type molecular chaperone hsc71 - rainbow trout
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                                                                                                                                                                                                                                                                                                                                                                       -----YTPGRARTGPTIEEVD 641
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Matches
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SHESULT 18
GHAK-type molecular chaperone Hsp70.3 - rat
Nalternate names: heat shock protein 70
C;Species: Rattus norregicus (Norway rat)
C;Boties: Rattus norregicus (Norway rat)
C;Boties: Rattus norregicus (Norway rat)
C;Boties: Rattus norregicus (Norway rat)
C;Date: 06-Jan-1995 #sequence_revision 06-Jan-1995 #text_change 09-Jul-2004
C;Accession: $41415, 168987
R;Jutz, W.
R;Jutz, W.
R;Jutz, W.
R;Jutz, W.
R;Jutz, W.
R;Jutz, W.
A;Reference number: $41413
A;Accession: $41415
A;Residues: 1-641 <\text{LUT}
A;Coss-references: UNIPROT:PS5063; EMBL:X77209; NID:g1814002; PIDN:CAA54424.1; PID:g450
B;Walter, L.; Rath, F.; Gunther, E.
Immunogenetics 40, 325-330, 1994
A;Fitle: Comparative analysis of the three major histocompatibility complex-linked heat
A;Reference number: 154542; MUD:95012453; PMID:7927536
A;Reference number: 154642; MUD:95012453; PMID:7927536
A;Recession: 168987
A;Reference number: 154542; MUD:95012453; PIDN:CAA54424.1; PID:g450934
A;Green: Hsp70-3
C;Generics: A;Gene: Hsp70-3
C;Function: involved in protein folding and assembling/disassembling of protein comple; S;Buperfamily: heat shock protein 70
C;Keywords: AIP; molecular chaperone
                                                                                                                                                                                             Comp
                                                                                             PID:9428
                                                                                                                                                                                           protein
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               TNDKGRLSKEEIERWVQEAEKYKAEDEVQRERVSAKNALESYAFNMKSAVEDEGLKGKIS 180
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   EADKKKYLDKCOEVISWLDANTLAEKDEFEHKRKELEQVCNPIISGLYQGAGG-----PG 235
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                9
                                                                                                                                                                                                                                                                                                                                                                              9
  A;Accession: S11456
A;Status: preliminary; translation not shown
A;Molecule type: mRNA
A;Molecule type: mRNA
A;Residues: 1-650 < DEL>
A;Cross-references: UNIPROT:P19120; EMBL:X53827; NID:g427; PIDN:CAA37823.1; EQ;Genetics:
C;Genetics:
C;Genetics:
A;Gene: hsc70
C;Function:
A;Description: involved in protein folding and assembling/disassembling of piC;Superfamily: heat shock protein 70
C;Superfamily: heat shock protein 70
C;Keywords: ATP; molecular chaperone
                                                                                                                                                                                                                                                                                                                                                                                                           KSENVQDLLLLDVAPLSLGLETAGGVMTALIKRNSTIPTKQTQIPTTYSDNQPGVLIQVY
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                                                                                                                                                                                                                                                                                   Length 650;
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82.7%; Score 1087; DB 2; Length 641;
Best Local Similarity 83.5%; Pred. No. 6.1e-63;
Matches 218; Conservative 17; Mismatches 18; Indels
                                                                                                                                                                                                                                                                                 Score 1091.5; DB 2; Length
Pred. No. 3.2e-63;
5; Mismatches 20; Indels
                                                                                                                                                                                                                                                                                                                              25; Mismatches
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        GMPGGFPGGGAPPSGGASSGPTIEEVD 650
                                                                                                                                                                                                                                                                                      83.1%;
79.8%;
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Best Local Similarity 79.8
Matches 213; Conservative
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AjStatus: preliminary
Anolecule type: DNA
A;Residues: 1-639 «DON»
A;Cross_references: UNIPROT:P54652; GB:L26336; NID:g476704; PIDN:AAA52698.1; PID:g476705
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Bonnycastle, L.L.C.; Yu, C.B.; Hunt, C.R.; Trask, B.J.; Clancy, K.P.; Weber, J.L.; Pat
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Genomics 23, 85-93, 1994.

A;Title: Cloning, Bequencing, and mapping of the human chromosome 14 heat shock protein A;Reference number: A55719; MUID:95130116; PMID:7829106

A;Accession: A55719
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C;Date: 23-Mar-1995 #sequence_revision 23-Mar-1995 #text_change 09-Jul-2004
C;Accession: A55719
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                                                                                                                                                                               EADKKKVLDKCOEVISWLDANTLAEKDEFEHKRKELEQVCNPIISGLYQGAGG-PG--PG
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                                 EGERAMTKONNLLGRFELSGIPPAPRGVPQIEVTFDIDANGILNVTATDKSTGKANKITI
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151129
dank-type molecular chaperone hsp70 - Iberian ribbed newt
N;Alternate names: heat shock protein HSP70
C;Species: Pleurodeles waltlii (Iberian ribbed newt)
                                                                                                                                                                                                                                                                                                                                                                                                                    dnaK-type molecular chaperone HSPA2 - human N;Alternate names: heat shock protein A2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            A; Cross-references: GDB:120059; OMIM:140560
                                                                                                                                                                                                                                                                   GFGAQGPKGGS-GSGPTIEEVD 258
                                                                                                                                                                                                                                                                                            GMPGGAPGAGSTGGGPTIEEVD 644
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A; Introns: #status absent
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dnaK-type molecular chaperone BmhsA - nematode (Brugia malayi)

d) Alternate names: heat shock protein homolog BmhsA

G; Species: Brugia malayi

C; Date: 22-Apr-1993 #sequence_revision 18-Nov-1994 #text_change 09-Jul-2004

C; Accession: A45635

R; Rothstein, N.; Rajan, T.V.

Mol. Blochem, Parasitol. 49, 229-237, 1991

A; Title: Characterization of an hsp70 gene from the human filarial parasite, Brugia mala A; Reference number: A45635

A; Reseasion: A45635

A; Reseasion: A45635

A; Residues: 1-644 < ROT>
A; Residues: 1-644 < ROT>
A; Cross-references: UNIPROT: P27541; GB:M68933; NID:g156069; PIDN:AAC17926.1; PID:g156070

A; Note: sequence extracted from NCBI backbone (NCBIN:77613, NCBIP:77616)
C;Accession: A45805
R;Selkirk, M. B.; Denham, D. A.; Partono, F.; Maizels, R.M.
J. Immunol. 143, 299-308, 1389
J. Immunol. 143, 299-308, 1389
A;Title: Heat shock cognate 70 is a prominent immunogen in brugian filariasis.
A;Reference number: A45805
A;Accession: A45805
A;Accession: A45805
A;Accession: A45805
A;Status: preliminary
A;Molecule Cype: mRNA
A;Residues: 1-315 <SEL>
A;Molecule Cype: mRNA
A;Residues: 1-315 <SEL>
A;Accessive authors translated the codon CTG for residue 1 as Arg
C;Function:
A;Molecule Cype: mrnslated the codon CTG for residue 1 as Arg
C;Function: involved in protein folding and assembling/disassembling of protein compl
C;Superfamily: heat shock protein 70
C;Keywords: ATP; molecular chaperone
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.larity 79.8%; Pred. No. 2.2e-61;
Conservative 20; Mismatches 29; Indels
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79.8%; Pred. No. 9.9e-62;
tive 20; Mismatches 29;
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Matches 209; Conservative
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A;Gene: BmhsA
C;Function:
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C;Species: Paralichthys olivaceus (Japanese flounder)
C;Species: Paralichthys olivaceus (Japanese flounder)
C;Date: 21-Jan-2000 #sequence_revision 21-Jan-2000 #text_change 09-Jul-2004
C;Accession: T43724
R;Yokoyama, Y.; Hashimoto, H.; Kubota, S.; Kinoshita, M.; Toyohara, H.; Sakaguchi, M.; Ta
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 C;Accession: A25646
R;Morimoto, R.I.; Hunt, C.; Huang, S.Y.; Berg, K.L.; Banerji, S.S.
Biol. Chem. 261, 12692-12699, 1986
A;Title: Organization, nucleotide sequence, and transcription of the chicken HSP70 gene. A;Reference number: A25646; MUID:86304452; PMID:3017985
A;Accession: A25646
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    A;Cross-references: UNIPROT:P08106; GB:J02579; NID:g211940; PIDN:AAA48825.1; PID:g211941
A;Note: the authors translated the codon TCG for residue 583 as Trp
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            protein compl
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387 KSENVQDILILIDVTPLSLGIETAGGVMTPLIKRNTTIPTKQTQTFTTYSDNQSSVLVQVY 446
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C;Species: Gallus gallus (chicken)
C;Date: 19-Nov-1988 #sequence_revision 19-Nov-1988 #text_change 09-Jul-2004
                                               A; Description: involved in protein folding and assembling/disassembling of C; Superfamily: heat shock protein 70 C; Keywords: ATP; molecular chaperone
                                                                                                                                                                      1 KSENVQDLLLLDVAPLSLGLETAGGVMTALIKRNSTIPTKQTQIFTTYSDNQPGVLIQVY
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        dnaK-type molecular chaperone - chicken
                                                                                                                                                                                                                                                                                                                                       241 AQGPKGGSGSGPTIEEVD 258
                                                                                                                                                                                                                                                                                                                                                                                 633
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                                                                                                                                                                                                                                                                                                                                                                ----GGSSGGPTIEEVD
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               A; Molecule type: DNA
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A; Accession: $10859
A; Status: preliminary
A; Molecule type: DNA
A; Residues: 1-633 < 2AK>
A; Cross-references: EMBL:M20567
C; Genetics:
A; Genetics:
C; Function:
A; Description: involved in protein folding and assembling/disassembling of protein compl
C; Superfamily: heat shock protein 70
C; Superfamily: heat shock protein 70
C; Keywords: AIP: molecular Abnorman
C;Date: 13-Sep-1996 #sequence_revision 13-Sep-1996 #text_change 09-Jul-2004
C;Accession: ISJ129
R;Billoud, B.; Rodriguez-Martin, M.L.; Berard, L.; Moreau, N.; Angelier, N.
Development 119, 921-932, 1993
A;Title: Constitutive expression of a somatic heat-inducible hep70 gene during amphibian A;Title: Constitutive expression of a somatic heat-inducible hep70 gene during amphibian A;Title: Constitutive expression of a somatic heat-inducible hep70 gene during amphibian A;Reference number: ISJ129; MUID:94244484; PMID:8187647
A;Accession: ISJ129
A;Status: preliminary; translated from GB/EMBL/DDBJ
A;Residues: 1-645 < ALL>
A;Cross-references: UNIPROT:Q91291; EMBL:X71951; NID:9431200; PIDN:CAA50749.1; PID:94312
A;Cross-references: UNIPROT:Q91291; EMBL:X71951; NID:9431200; PIDN:CAA50749.1; PID:94312
A;Csone: hsp70
C;Function:
A;Gene: hsp70
C;Function:
C;Superfamily: heat shock protein folding and assembling/disassembling of protein compl
C;Superfamily: heat shock protein 70
C;Keywords: ATP; molecular chaperone
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    TNDKGRLSKEEIERWVQEAERYKADDEAQREKVSAKNTLESIAFNWKSTVEGDNLKDKIS 565
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510859
danaK-type molecular chaperone HSP70.2 - mouse
NyAlternate names: heat shock protein 70.2
Cjopeciae: Mus musculus (house mouse)
Cjoate: 20-Feb-1995 #sequence_revision 20-Feb-1995 #text_change 30-Jan-1998
Cjaccession: $10859
Rjzakeri, Z.F.; Wolgemuth, D.J.; Hunt, C.R.
Rjzakeri, Z.F.; Wolgemuth, D.J.; Bunt, C.R.
A;Title: Identification and sequence analysis of a new member of the mouse H
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80.3%; Score 1054.5; DB 2; Length
Best Local Similarity 79.1%; Pred. No. 7.6e-61;
Matches 204; Conservative 23; Mismatches 20; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  27; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                80.5%; Score 1058; DB 2; 79.6%; Pred. No. 4.6e-61; tive 24; Mismatches 27;
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626 SGAQARQGSSSTGPTIEEVD 645
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Matches 207; Conservative
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A, Accession: A22175
A; Molecule type: mRNA
A, Reseas: 81-120 <812>
A; Cross-references: GB: K02307; NID: 9214271; PIDN: AAA49759.1; PID: 9214272
C; Comment: This protein is expressed constitutively in oocytes, disappears after fertili
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               A, Description: involved in protein folding and assembling/disassembling of protein compl C, Superfamily: heat shock protein 70 C, Keywords: ATP; heat shock; molecular chaperone; stress-induced protein
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  A; Cross-references: UNIPROT: P02827; GB: X01102; GB: M11915; NID: g64795; PIDN: CAA25576.1;
                                                                                                                                                                                                                                                                                                                                                                                       R,Blenz, M.
EMBO J. 3, 2477-2483, 1984
Afittle: Xenopus hsp 70 genes are constitutively expressed in injected oocytes.
A;Reference number: A90993; MUID:85076567; PMID:6510409
A;Accession: A03310
                         NiAlternate names: heat shock protein 70; heat shock protein X16 C;Species: Xenopus lacvis (African clawed frog) C;Date: 28-May-1986 #sequence_revision 28-May-1986 #text_change 09-Jul-2004 C;Accession: A03310; A22175
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C;Date: 15-Oct.1999 #sequence_revision 15-Oct.1999 #text_change 09-Jul-2004
C;Accession: T2139 #sequence_revision 15-Oct.1999 #text_change 09-Jul-2004
R;Basham, V.; Ainscough, R.
aibmitted to the EMBL Data Library, September 1996
A;Reference number: Z19417
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A;Title: Developmental control of the heat shock response in Xenopus.
A;Reference number: A22175; MUID:84221917; PMID:6203112
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A; Residues: 1-647 < BIE>
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C;Function:
Y,Description: involved in protein folding and assembling/disassembling of protein compl
C;Superfamily: heat shock protein 70
C;Keywords: ATP; molecular chaperone
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Apalernate names: heat shock protein 70.2; heat shock protein, testis-specific
C; Species: Rattus norvegicus (Norway rat)
C; Date: 07-Sep-1990 #sequence_revision 07-Sep-1990 #text_change 30-Jan-1998
C; Accession: S08211
R; Wisniewski, J; Kordula, T.; Krawczyk, Z
Biochim. Biophys. Acta 1048, 93-99, 1990
A; Title: Isolation and nucleotide sequence analysis of the rat testis-specific major h
A; Reference number: S08211; MUID:90122930; PMID:1688714
A; Accession: S08211
A; Molecule type: DNA
A; Residues: 1-633 < WIS>
A; Cross-references: EMBL:X15705
A; Cross-references: EMBL:X15705
C; Genetics:
                            protein,
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                         kDa heat shock
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                                                                                                                                                                                                                                 Length 640;
                                                                                                                                                          EMBL: AB010871; PIDN: BAA31697.1
                                                                                                                                                                                                                          Query Match 79.9%; Score 1049.5; DB 2; Length Best Local Similarity 77.8%; Pred. No. 1.6e-60; Matches 200; Conservative 33; Mismatches 21; Indels
submitted to the EMBL Data Library, January 1998
A;Description: cDNA cloning of heat-inducible HSP70, a 70.6 ]
A;Reference number: 222648
A;Accession: T43724
A;Status: preliminary; translated from GB/EMBL/DDBJ
A;Rolecule type: mRNA
A;Residues: 1-640 < VOX.>
A;Residues: 1-640 < VOX.>
A;Cos8-references: UNIPROT:093240; EMBL:AB010871; PIDN:BAA33C;Superfamily: heat shock protein 70
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Best Local S
Matches 203
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A;Accession: S09036
A;Molecule type: DNA
A;Cossidues: 1-643 cLEU>
A;Cross-references: UNIPROT:P17066; EMBL:X51757; NID:g35221; PIDN:CAA36061.1; PID:g35222
R;Schiller, P.; Amin, J.; Ananthan, J.; Brown, M.E.; Scott, W.A.; Voellmy, R.
A;Title: Cis-acting elements involved in the regulated expression of a human HSP70 gene.
A;Reference number: 137563; MUID:89037198; PMID:3184191
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R;Leung, T.K.C.; Rajendran, M.Y.; Monfries, C.; Hall, C.; Lim, L.
Bacchem, J. 267, 125-131, 1990
A;Title: The human haat-shock protein family. Expression of a novel heat-inducible HSP70
A;Reference number: S09036; MUID:90226304; PMID:2327978
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TNDKGRLSKEBIERMVQEAEKYKAEDEVQRERVSAKNALESYAFNMKSAVEDEGLKGKIS 180
                                           563
                                                                                   235
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                                                                                                                                                                                                                                                                                                                               dnaK-type molecular chaperone HSPA6 - human
NjAlternate names: heat shock protein 708'
C'Species: Homo sapiens (man)
C'Spacies: 30-Sep-1991 #sequence_revision 30-Sep-1991 #text_change 09-Jul-2004
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 181 EADKKKVLDKCQEVISWLDANTLAEKDEFEHKRKELEQVCNPIISGLYQGAGGPGPGFG
                        386 KCEKVQDLLLLDVAPLSLGLETAGGVMTTLIQRNATIPTKQTQTFTTYSDNQPGVFIQVY
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  A,Status: preliminary; translated from GB/EMBL/DDBJ
                                                                                                                                                                                                  624 GGGGMPGAAGAAGAGGAGPTIEEVD 651
                                                                                                                                                                              -----PGGFGAQGPKGGSGSGPTIEEVD 258
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   A;Cross-references: GDB:127963; OMIM:140555
A;Map position: lcen-lqter
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A; Residues: 1-6 <RES>
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A3633
dnaK-type molecular chaperone Hsc70-4 - fruit fly (Drosophila melanogaster)
N;Alternate names: heat shock cognate protein 70
C;Species: Drosophila melanogaster
C;Date: 25-Jan-1991 #sequence_revision 25-Jan-1991 #text_change D9-Jul-2004
C;Species: Drosophila melanogaster
C;Date: 25-Jan-1991 #sequence_revision 25-Jan-1991 #text_change D9-Jul-2004
C;Accession: A3633
R;Perkins, L.A.; Doctor, J.S.; Zhang, K.; Stinson, L.; Perrimon, N.; Craig, E.A.
Mol. Cell. Biol. 10, 3232-3238, 1990
A;Title: Molecular and developmental characterization of the heat shock cognate 4 gene A;Reference number: A3633; MUD:90258915; PMID:2111451
A;Retus: preliminary
A;Retus: preliminary
A;Rotession: A3633
A;Status: preliminary
A;Rotession: A3633
A;Status: Preliminary
A;Rotession: A3633
A;Status: Preliminary
A;Gene: FlyBase: HSC70-4
A;Cross-references: UNIPROT:P11147; GB:M36114; NID:g157663; PIDN:AAA28627.1; PID:g157665
C;Genetics:
A;Gene: FlyBase: HSC70-4
A;Cross-references: FlyBase: FBgn0001219
C;Function: involved in protein folding and assembling/disassembling of protein comple; Reywords: ATP; molecular chaperone; nucleus
                                                                                   EMBL: Z80223; PIDN: CAB02319.1; GSPDB: GN00022; CESP: F2
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                                                                                                                                                                                                                                                                    ; Score 1034; DB 2;
; Pred. No. 1.6e-59;
21; Mismatches 34;
             A;Accession: T21394
A;Status: preliminary; translated from GB/EMBL/DDBJ
A;Status: preliminary; translated from GB/EMBL/DDBJ
A;Aclaule type: DNA
A;Residues: 1-640 <WIL>
A;Crose-references: UNIPROT:Q93601; EMBL:Z80223; PI)
A;Experimental source: clone F26D10
C;Genetics:
                                                                                                                                                            A/Gene: CESP:F26D10.3
A/Map position: 4
A/Introns: 69/1; 331/3; 558/3
C/Superfamily: heat shock protein 70
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Conservative
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Best Local Similarity
Matches 201; Conserv
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A;Molecule type: DNA
A;Residues: 1-654 <GEL>
A;Cross-references: UNIFROT:Q05944; EMBL:M84019; NID:g159267; PIDN:AAA29213.1; PID:g1592
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C, Superfamily: heat shock protein 70
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                                                                                                                                                 KCEKVQDLLLLDVAPLSLGLETAGGVMTTLIQRNATI PTKQTQTFTTYSDNQPGVLIQVY
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C.Keywords: ATP; heat shock; molecular chaperone; stress-induced protein
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          .,
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                                              Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Hydra magnipapillata
                                           34;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     76.6%; Score 1007; DB 2; 74.0%; Pred. No. 9.5e-58; tive 27; Mismatches 34;
                Pred. No. 8e-58;
                                           32; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      -- PGGFGAQGPKGGSGSGPTIEEVD 258
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 dnaK-type molecular chaperone hsp70.1 - Hy
N,Alternate names: heat shock protein 70.1
C,Species: Hydra magnipapillata
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               AQARQGAPSTGPVIEEVD 643
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          AQGPKGGSGSGPTIEEVD 258
                74.48;
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Best Local Similarity 74.0%,
Matches 196; Conservative
             Best Local Similarity 74.4%
Matches 192; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              A;Gene: hsp70.1
A;Introns: 69/1; 93/3
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     A; Accession: S27004
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dnak-type molecular chaperone hsc70 - Iberian ribbed newt

N;Alternate names: heat shock cognate 70K protein
C;Species: Pleurodeles waltlii (Iberian ribbed newt)
C;Date: 28-Oct-1997 #sequence_revision 28-Oct-1997 #text_change '09-Jul-2004
C;Date: 28-Oct-1997 #sequence_revision 28-Oct-1997 #text_change '09-Jul-2004
C;Accession: JC5642
R;Delais-Fanien, C: Penrad-Mobayed, M.; Angelier, N.
Biochem: Biophys. Res. Commun. 238, 159-164, 1997
A;Title: Molecular cloning of a cDNA encoding the amphibian Pleurodeles waltl 70-kDa hea A;Reference number: JC5642; MUID:97445144; PMID:9299471
A;Accession: JC5642
A;Molecule type: mRNA
A;Residues: 1-645 <DEL->
A;Residues: 1-645 <DEL->
A;Residues: 1-645 <DEL->
A;Residues: UNIPROT:013120; GB:Y13661; NID:g2196881; PIDN:CAA74012.1; PID:g21968
A;Bxperimental source: embryo
A;Rote: the sequence of residues 8-17 and 18-27 are interchanged in authors' translation C;Genetics:
A;Genetics:
A;Gen
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               A, Description: involved in protein folding and assembling/disassembling of protein completions to the state shock protein 70 C; Superfamily: heat shock protein R; 224-264/Domain: Typ-binding #status predicted <ATP>
F; 246-262/Region: nuclear location signal F; 521-645/Domain: peptide-binding #status predicted <PBB>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         A;Description: involved in protein folding and assembling/disassembling of protein compl
C;Superfamily: heat shock protein 70
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ITNDKGRLSKEEIERMVQEAEKYKAEDEVQRERVSAKNALESYAFNMKSAVEDEGLKGKI 179
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NiAlternate names: heat shock protein 70
C;Species: Sus scrofa domestica (domestic pig)
C;Species: Sus scrofa domestica (domestic pig)
C;Accession: S34625; S25885
R;Dezeure, F.; Vaiman, M.; Chardon, P.
Biochim. Biophys. Acta 1174, 17-26, 1993
A;Title: Characterization of a polymorphic heat shock protein 70 gene in swiA;Reference number: S34625; MUID:93326632; PMID:7687468
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              1 KSENVQDLLLLDVAPLSLGLETAGGVMTALIKRNSTIPTKQTQIFTTYSDNQPGVLIQVY
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   GGFGAQG--PKG-GSGSGPTIEEVD 258
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al Similarity 78.5 208; Conservative

Query Match

Best Local Matches 20

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180 570 235 630

76.7%; Score 1008; DB 2; Length 643;

Query Match

A; Molecule type: mRNA A; Residues: 1-643 <DEZ>

C;Genetics:

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C;Accession: T45522
R;Li, Q.B.; Guy, C.L.
Bubmitted to the EMBL Data Library, November 1997
A;Description: The organization and evolution of the spinach stress 70 molecular chaperor
A;Reference number: Z22998
A,Molecule type: mRNA
A,Residues: 19-68, T',70-113, P',115-252, FH',255-288, I',290-299, G',301-326, A',328-38
A,Note: the authors translated the codon GAT for residue 59 as Pro
C,Genetics:
                                                                                                                                                              A;Description: involved in protein folding and assembling/disassembling of protein compl C;Superfamily: heat shock protein 70 C;Keywords: ATP; molecular chaperone; surface antigen
                                                                                                                                                                                                                                                                                                                                                                                                                   TNDKGRLSKEEIERMVQEAEKYKAEDEVQRERVSAKNALESYAFNMKSAVEDEGLKGKIS 180
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              510
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             heat shock protein HSC70-1, cytosolic [imported] - spinach
C;Species: Spinacia oleracea (spinach)
C;Date: 31-Jan-2000 #sequence_revision 31-Jan-2000 #text_change 09-Jul-2004
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            442 EGERALTKDNNLLGKFELSGIPPAPRGTPQIEVTFDIDANGILNVSAVDKGTGKQNKITI
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                                                                                                                                                                                                                                                                            Length 637;
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                                                                                                                                                                                                                                                                                                                              36; Indels
                                                                                                                                                                                                                                                                         Score 988; DB 2;
Pred. No. 1.6e-56;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        A;Status: preliminary; translated from GB/EMBL/DDBJ
                                                                                                                                                                                                                                                                                                                            23; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           620 ASGAGGGSGKGPTIEEVD 637
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                                                                                                                                                                                                                                                                            75.2%;
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Matches 197; Conservative
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Matches 184; Conservative
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                                                                                                           A;Gene: hsp70
C;Function:
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           Annawity molecular chaperone hsp70A - Caenorhabditis elegans

N.Alternate names: heat shock protein 70 A

C.Species: Caenorhabditis elegans

C.Species: Caenorhabditis elegans

C.Date: 30-Jun-1989 #sequence_revision 30-Jun-1989 #text_change 09-Jul-2004

C.Accession: JT0285

R.Shutch, T.P.; Heschl, M.F.P.; Baillie, D.L.

Gene 64, 241-255, 1988

A;Title: The Caenorhabditis elegans hsp70 gene family: a molecular genetic characterizat

A;Reference number: JT0285; MUID:88297155; PMID:2841196

A;Recession: JT0285

A;Molecule type: DNA, mRNA

A;Residues: 1-640 eSNU>

A;Rote: genomic clones representing six distinct members of the hsp70 gene family were i

A;Note: one of the three introns in hsp70A is in a position similar to an intron in Dros

C;Genetics:

A;Rote: hsp70A

A;Map position: IV

A;Introns: 69/1; 331/3; 558/3

C;Superfamily: heat shock protein 70

C;Superfamily: heat shock; molecular chaperone; stress-induced protein
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  A;Cross-references: UNIPROT:P08418; GB:L02415; NID:g161025; PIDN:AAA29898.1; PID:g552242
A;Note: sequence extracted from NCBI backbone (NCBIN:122799, NCBIP:122802)
A;Nedstrom, R.; Culpepper, J.; Harrison, R.A.; Agabian, N.; Newport, G.
J. Exp. Med. 165, 1430-1435, 1987
A;Title: A major immunogen in Schistosoma mansoni infections is homologous to the heat-s
A;Reference number: JQ0314; MUID:87197073; PMID:3106556
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      385 KSEAVODLLLLDVAPLSLGIETAGGVMTALIKRNTTIPTKTAQTFTTYSDNQPGVLIQVY 444
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              EGERAMIKDNNLLGRFELSGIPPAPRGVPQIEVTFDIDANGILNVTATDKSTGKANKITI 120
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      THDEADRESKDDIERMYNEAEKYKADDEAQKDRIGAKNGLESYAFNIKQTIEDEKLKOKIS 564
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               181 EADKKKVLDKCQEVISWLDANTLAEKDEFEHKRKELEQVCNPIISGLYQGAGGPGGGG 240
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              565 PEDKKKIEDKCDELLKWLDSNQTAEKEEFESQQKDLEGLAKPDLSKLYQSAGGAPPG--A 622
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         diak-type molecular chaperone hsp70 - fluke (Schistosoma mansoni)

NyAlternate names: heat shock protein hsp70; major surface antigen
C;Species: Schistosoma mansoni
C;Date: 01-Dec-1993 #sequence_revision 18-Nov-1994 #text_change 09-Jul-2004
C;Accession: A48469; JQ0314
R;Neumann, S.; Ziv, E.; Lantner, F.; Schechter, I.
Myl. Blochem. Parasitol: 56, 357-360, 1992
Myl. Blochem. Parasitol: 56, 357-360, 1992
A;Rtle: Cloning and sequencing of an hsp70 gene of Schistosoma mansoni.
A;Reference number: A48469; MUD:93133227; PMID:1484560
A;Accession: A48469; mulD:93133227; PMID:1484560
A;Status: preliminary
A;Nesiques: 1-637 <NEU>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      1 KSENVQDLLLLDVAPLSLGLETAGGVMTALIKRNSTIPTKQTQIFTTYSDNQPGVLIQVY
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           75.6%; Score 994; DB 1; Length 64.75.2%; Pred. No. 6.4e-57; ive 23; Mismatches 39; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        AQGPKGGSGSGPTIEEVD 258
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Matches 194; Conservative
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us-09-646-835-1_copy_384_641.rpr

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A;Description: involved in protein folding and assembling/disassembling of protein compl C;Superfamily: heat shock protein 70 C;Keywords: ATP; molecular chaperone
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R; Bevan, M.; Hilbert, H.; Braun, M.; Holzer, E.; Brandt, A.; Duesterhoeft, A.; Bancroft, A; Reference number: Z24490
A; Reference number: Z24490
A; Accession: T48271
A; Status: preliminary
                                                                                                                                                A; Molecule type: DNA
A; Residues: 15-64,'S', 66-194,'R',196-371,'V',373-375,'V',377-506,'V',508-651 <KIN>
A; Residues: 15-64,'S', 66-194,'R', 196-371,'V',373-375,'V',377-506,'V',508-651 <KIN>
A; Coss-references: EMBL:X77199, NID:9450879; PIDN:CAA54419.1; PID:9450880
A; Wu, C.H.; Caspar, T.; Browse, J.; Lindquist, S.; Somerville, C.
Plant Physiol. 88, 731-740, 1988
A; Title: Characterization of an HSP70 cognate gene family in Arabidopsis.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     182 ADKKKVLDKCQEVISWLDANTLAEKDEFEHKRKELEQVCNPIISGLYQG----AGGPGPG 237
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           571 ADKKKIEDSIEQAIQWLEGNQLAEADEFEDKMKELESICNPIIAKMYQGAGGEAGGFGAS 630
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                GERAMTKDINNLLGRFELSGIPPAPRGVPQIEVTFDIDANGILINVTATDKSTGKANKITIT 121
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         122 NDKGRLSKEEIERMVQEAEKYKAEDEVQRERVSAKNALESYAFNMKSAVEDEGLKGKISE 181
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            dnaK-type molecular chaperone hac70.1 - Arabidopsis thaliana
N;Alternate names: protein T22P11.90
C;Species: Arabidopsis thaliana (mouse-ear cress)
C;Date: 20-Apr-2000 #sequence_revision 20-Apr-2000 #text_change 09-Jul-2004
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   GERARTKDINILLGKFELSGIPPAPRGVPQITVCFDIDANGILNVSAEDKTTGQKNKITIT
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                43; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      A;Residues: 1-651 <BEV>
A;Cross-references: UNIPROT:P22953; EMBL:AL162971
A;Experimental source: cultivar Columbia; BAC clone T22P11
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      72.7%; Score 955; DB 2; 70.1%; Pred. No. 2.2e-54;
                                     submitted to the EMBL Data Library, January 1994 A;Reference number: S41402 A;Accession: S41402
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                31; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   238 GFGAQGPKGGSGSGPTIEEVD 258
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C, Superfamily: heat shock protein 70
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         A; Cross-references: GB: M23105
A; Experimental source: leaf
                                                                                                                                                                                                                                                                                                                                                                    A;Reference number: JA0169
                                                                                                                                                                                                                                                                                                                                                                                                                                      A; Molecule type: DNA
A; Residues: 1-120 <WUC>
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Best Local Similarity
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daak-type molecular chaperone hsc70.1 - Arabidopsis thaliana
M.Alternate names: heat shock cognate protein 70.1
G.Species: Arabidopsis thaliana (mouse-ear cress)
G.Date: 20-Feb-1995 #sequence revision 20-Feb-1995 #text_change 09-Jul-2004
G.Jacession: S46302; S414042; JA0169; S36623
G.Jacession: S46302; A10402; JA0169; S36623
G.Jact Mol. Biol. 25, 577-583, 1994
A.Title: Isolation of a cDNA encoding a 70 kDa heat-shock cognate protein expressed in v
A.Title: Isolation of a cDNA encoding a 70 kDa heat-shock cognate protein expressed in v
A.Title: S4302
A.Accession: S46302
A.Accessi
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      A, Residues: 1-641 <RUB>
A, Ross-references: UNIPROT: P29843; GB:L01500
C, Comment: This protein is a member of the heat-shock cognate proteins that are implicat C, Genetics:
C, Genetics:
A, Gene: hsc.l
                                                                                                                                                                                                                                                                                                                                                                                      NyAlternate names: heat-shock cognate protein 1
C;Species: Drosophila melanogaster
C;Date: 24-Feb-1994 #sequence_revision 24-Feb-1994 #text_change 09-Jul-2004
C;Accession: JN0668
R;Rubin, D.M.; Mehta, A.D.; Zhu, J.; Shoham, S.; Chen, X.; Wells, Q.R.; Palter, K.B.
A;Title: Genomic structure and sequence analysis of Drosophila melanogaster HSC70 genes.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          A;Cross-references: FlyBase:FBgn0001219
C;Function:
C;Punction:
C;Punction: involved in protein folding and assembling/disassembling of protein compl
C;Superfamily: heat shock protein 70
C;Superfamily: heat chock protein 70
C;Keywords: ATP; molecular chaperone
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EGERAMTKONNLLGRFELSGIPPAPRGVPQIEVTFDIDANGILNVTATDKSTGKANKITI 120
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   624 GSNPGATGGSGPTIEEVD 641
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                                                                                                           242 QGPKGGSGSGPTIEEVD 258
                                                                                                                                                        A; Accession: JN0668
A; Molecule type: DNA
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450

Fri Apr

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A;Molecule type: mRNA
A;Residues: 1-647 <DE2>
A;Cross-references: UNIPROT:Q41027; EMBL:Z32537; NID:g473216; PIDN:CAA83548.1; PID:g47321
                                                                                                                                                                                                                                                                                                                                                A;Description: involved in protein folding and assembling/disassembling of protein complets, Superfamily: heat shock protein 70
C;Superfamily: heat shock protein 70
C;Keywords: ATP; molecular chaperone
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                      C;Species: Pisum sativum (garden pea)

C;Date: 13-Jan-1995 #sequence_revision 13-Jan-1995 #text_change 09-Jul-2004

C;Accession: 855800; 844168

R;DeRocher, A.; Vierling, B.
Bjant Mol. Biol. 27, 441-456, 1995

A;Title: Cytoplasmic HSP70 homologues of pea: differential expression in vegetative and A;Reference number: 853498; MUID:95201239; PMID:7894010
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         dnax-type molecular chaperone hsc70-3 - tomato
N;Alternate names: heat-shock cognate protein 70-3
C;Species: Lycoperasicon esculentum (tomato)
C;Date: 10-May-1996 #sequence_revision 16-Aug-1996 #text_change 09-Jul-2004
C;Accession: JC4786
C;Accession: JC4786
R;Sun, S,W.; Chung, M.C.; Lin, T.Y.
A;Title: The structure and expression of an hsc70 gene from Lycopersicon esculentum.
A;Reference number: JC4786; MUID:96235142; PMID:8666252
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        450 GERTRIRDINILLGKFELSGIPPAPRGVPQIIVCFDIDANGILNVSAEDKTTGQKNKITIT 509
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      NDKGRLSKEETERWVQBAEKYKAEDEVQRERVSAKNALESYAFNMKSAVEDEGLKGKISE 181
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Best Local Similarity 69.3%; Pred. No. 1.3e-53;
Matches 181; Conservative 34; Mismatches 42;
N;Alternate names: heat shock cognate protein HSC71.0
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A; Residues: 1-651 <SUN>
                                                                                                                                                                                          A; Accession: S53500
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C;Species: Arabidopsis thaliana (mouse-ear cress)
C;Species: Arabidopsis thaliana (mouse-ear cress)
C;Date: 20-Apr-2000 #sequence_revision 20-Apr-2000 #text_change 09-Jul-2004
C;Accession: T48270
R;Bevan, M.; Hilbert, H.; Braun, M.; Holzer, E.; Brandt, A.; Duesterhoeft, A.; Bancroft, submitted to the Protein Sequence Database, April 2000
A;Reference number: Z24490
A;Accession: T48270
A;Accession: T48270
A;Accession: T48270
A;Accession: Lype: DNA
ij
                                                                       511 NDKGRLSKDEIEKMVQEAEKYKSEDEEHKKKVEAKNALENYAYNMRNTIQDEKIGEKLPA 570
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                                              SENVQDLLLLDVAPLSLGLETAGGVMTALIKRNSTIPTKQTQIFTTYSDNQPGVLIQVYE
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70.7%; Pred. No. 3e-54;
ive 27; Mismatches 44; Indels
43; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             A;Residues: 1-653 EBEV>
A;Cross-references: UNIPROT: P22954; EMBL:AL162971
A;Experimental source: cultivar Columbia; BAC clone T22P11
C;Genetics:
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S44168
dnaK-type molecular chaperone HSC71.0 - garden pea
31; Mismatches
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Best Local Similarity 70.7
Matches 186; Conservative
Matches 183; Conservative
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A; Note: T22P11.80
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70 family and other mole
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A;Experimental source: strain Bloomsdale
                                                                                  A, Accession: S53126
A, Status: preliminary
A, Molecule type: DNA
A, Molecule type: DNA
A, Rediues: 1-649 < CUN>
A, CCOSS-references: UNIPROT: Q40693; EMBL: X67711; NID: 9736271; PIDN: CAA47948.1; PID: 97631
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  heat shock protein 70, cytosolic [imported] - spinach
heat shock protein 70, cytosolic [imported] - spinach
C;Species: Spinacia oleracea (spinach)
C;Date: 31-Jan-2000 #sequence_revision 31-Jan-2000 #text_change 09-Jul-2004
C;Accession: T45517
Blant Mol. Biol. 39, 21-34, 1999
A;Title: Coordinate and non-coordinate expression of the stress 70 family an A;Reference number: Z16516; MUID:99178791; PMID:10080706
A;Reference number: Z16516; MUID:99178791; PMID:10080706
                                                                                                                                                                                                                                                                  A;Description: involved in protein folding and assembling/disassembling of | C;Superfamily: heat shock protein 70 C;Keywords: ATP; molecular chaperone
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R;Qun, W.; Rong-Xiang, F.
submitted to the EMBL Data Library, July 1994
A;Description: Structure and expression of a rice hsp 70 cognate gene.
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                                                                                                                                                                                                                                                                                                                                                                  Length 649;
                                                                                                                                                                                                                                                                                                                                                                                                        45; Indels
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                                                                                                                                                                                                                                                                                                                                                             Query Match 71.5%; Score 939; DB 2; Best Local Similarity 69.9%; Pred. No. 2.4e-53; Matches 181; Conservative 31; Mismatches 45
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               A;Status: preliminary; translated from GB/EMBL/DDBJ
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Best Local Similarity 70.68
Matches 185; Conservative
                                                                A;Reference number: S53126
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       A;Molecule type: mRNA
A;Residues: 1-651 <LI
                                                                                                                                                                                                                 A; Gene: hsp70
A; Introns: 72/1
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                                                                                                                                                                                             C, Genetics:
                                                                                                                                                                                                                                                           C; Function:
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              A;Molecule type: mRNÅ
*Kesidues: 1-653 - KOKS.
A;Cross-references: UNIPROT:P29357; EMBL:X61491; NID:921337; PIDN:CAA43711.1; PID:921338
A;Note: sequence extracted from NCBI backbone (NCBIN:80804, NCBIP:80805)
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                                                                                                                                                                                                                                                                                                                                                                                                                                                  dnak-type molecular chaperone SCE70 - spinach
NiAlternate names: heat shock protein SCE70
C;Species Spinacia oleracea (spinach)
C;Species Spinacia oleracea (spinach)
C;Date: 04-Mar-1993 #sequence_revision 18-Nov-1994 #text_change 09-Jul-2004
C;Date: 04-Mar-1993 #sequence_revision 18-Nov-1994 #text_change 09-Jul-2004
C;Accession: A42582; S21943
R;Ko, K; Bornemisza, O;; Kourtz, L; Ko, Z.W.; Plaxton, W.C.; Cashmore, A.R.
J; Boid. Chem. 267, 2986-2993, 1992
A;Title: Isolation and characterization of a cDNA clone encoding a cognate 70-kDa heat shacession: A42582
A;Reference number: A42582; MUID:92147640; PMID:1371110
A;Status; preliminary
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   A; Description: involved in protein folding and assembling/disassembling of protein C; Superfamily: heat shock protein 70 C; Keywords: ATP; chloroplast; molecular chaperone
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                                                                  GERAMIKDNNILGRFELSGIPPAPRGVPQIEVTFDIDANGILNVTATDKSTGKANKITIT 121
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                                                                                                                                                                                                                                         ADKKKVLDKCQEVISWLDANTLAEKDEFEHKRKELEQVCNPIISGLYQGAGGPGFGFGA 241
  391 NEKVQDLLLLDVTPLSLGLETAGGVMTTLIPRNTTIPTKKEQVFSTYSDNQPGVLIQVYE 450
                                          GERAMIKDNNLLGRFELSGIPPAPRGVPQIEVIFDIDANGILNVTAŢDKSTGKANKITIT 121
                                                                                                                               NDKGRLSKEETERMVQEAEKYKAEDEVQRERVSAKNALESYAPNMKSAVEDEGLKGKISE 181
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N;Alternate names: heat shock cognate protein 70
C;Species: Oryza sativa (rice)
C;Date: 09-Jul-1995 #sequence_revision 21-Jul-1995 #text_change 09-Jul-2004
C;Accession: S53126
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           GERTRTRDNNLLGKFELSGIPPGPRGVPQINVCFDIDANGILNVSAEDKTTGQKNKIRIT
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                                                                                                                                                                                                                                                                                                      241 AQGPKGG---SGSGPTIEEVD 258
                                                                                                                                                                                                                                                                                                                            EGPTSGGGAGPKIEE 645
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A;Cross-references: UNIPROT:P09189; EMBL:X06932; NID:g20556; PIDN:CAA30018.1; PID:g20557
A;Experimental source: var. Mitchell diploid
A;Experimental source: var. Mitchell diploid
A;Genetic hpp70
A;Introns: 72/1
C;Function:
A;Description: involved in protein folding and assembling/disassembling of protein comple C;Superfamily: heat shock protein 70
C;Keywords: ATP; molecular chaperone
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C;Superfamily: heat shock protein 70
C;Keywords: ATP; molecular chaperone
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A;Cross-references: UNIPROT:P27322; EMBL:X54030; NID:g19257; PIDN:CAA37971.1; PID:g19258
                                                                                                                                                                                                                                                                                                                                                                 3,
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NyAlternate names: heat shock cognate protein 70
GiSpecias: Lycopersicon esculentum (tomato)
G;Date: 13-Jan-1995 #sequence_revision 13-Jan-1995 #text_change 09-Jul-2004
G;Accession: S14950
G;Accession: S14950
Biol. 16, 475-478, 1991
A;Title: Sequences of two hac 70 cDNAs from Lycopersicon esculentum.
A;Reference number: S14949; MUID:91370894; PMID:1893113
A;Accession: S14950...
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                                                                                                                                                                                                                                                                                                       70.6%; Score 928; DB 2; 70.0%; Pred. No. 1.2e-52;
                                                                                                                                                                                                                                                                                                                                                                 Conservative 32; Mismatches
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Matches 180; Conservative 32; Mismatches
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Best Local Simil
Matches 184; C
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                   John Marketype molecular chaperone - Eimeria acervulina
Nalternate names: heat shock protein
C;Species: Eimeria accrvulina
C;Species: Eimeria accrvulina
C;Date: 06-Jan-1995 #sequence_revision 06-Jan-1995 #text_change 09-Jul-2004
C;Accession: 837165
R;Laurent, F.; Bourdieu, C.; Yvor, P.; Pry, P.
submitted to the EMBL Data Library, September 1993
A;Description: Cloning of a 70 KDa protein of E.acervulina sporozoite which is related the A;Reference number: 837165
A;Accession: 837165
A;Accession: 837165
A;Residues: 1-646 <LAU>
A;Residues: 1-646 <LAU>
A;Cross-references: UNIPROT:Q24768; EMBL:Z26134; NID:g401828; PIDN:CAA81135.1; PID:g4018
C;Function:
A;Description: involved in protein folding and assembling/disassembling of protein comple; Keywords: ATP; molecular chaperone
C;Keywords: ATP; molecular chaperone
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                                                                                                                                                                                      387 SSQVQDLLLLDVAPLSLGLETAGGVMTKLIERNTTIPTKKSQIFTTYADNQPGVLIQVFE 446
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        182 ADKKKVLDKCQEVISWLDANTLAEKDEFEHKRKELEQVCNPIISGLYQ---GAGGPGPGG 238
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                                                                      511 NDKGRLSKEEIEKWVQEAEKYKSEDEEHKKKVESKNALENYAYMRNTVKDEKISSKISE
                                    NDKGRLSKEEI ERMVQEAEKYKAEDEVQRERVSAKNALESYAFNMKSAVEDEGLKGKISE
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         44; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Query Match 70.7%; Score 928.5; DB 2 Best Local Similarity 68.8%; Pred. No. 1.1e-52; Matches 179; Conservative 34; Mismatches 44
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                                                                                                                                                                                                                                                                                                                             630 DDDEVPSAGASSGPGPKIEEVD 651
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627 MPDMSAAAGAAGGPTVEEVD 646
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dnak-type molecular chaperone HSP70 - Chlamydomonas reinhardtii
N;Alternate names: heat-shock protein HSP70
C;Species Chlamydomonas reinhardtii
C;Date: 17-Aug-1992 #sequence_revision 17-Aug-1992 #text_change 09-Jul-2004
C;Accession: JQ1515
R;Mueller, R.W.; Igloi, G.L.; Beck, C.F.
A;Mieller, R.W.; 1gloi, G.L.; Beck, C.F.
A;Title: Structure of a gene encoding heat-shock protein HSP70 from the unicellular alga A;Reference number: JQ1515; MUID:92175520; PMID:1541398
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  A; Introns. 17/2; 59/3; 106/1; 159/3; 193/2; 550/1

G; Function:
A; Description: involved in protein folding and assembling/disassembling of protein compl
C; Superfamily: heat shock protein 70
C; Keywords: ATP; calmodulin binding; molecular chaperone
F; 205-213 Region: ATP binding #status predicted
F; 222-228 Region: ATP binding #status predicted
F; 221-228 Region: calmodulin binding #status predicted
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A;Note: the authors translated the codon GAC for residue 371 as Asn
C;Comment: This protein is inducible by light as well as by elevated temperature.
                                                        protein compl
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              235
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                                                                                                                                                                                                                                                                                                                   STQVQDLLLLDVAPLSLGLETAGGVMTKLIERNTTIPTKKSQIFTTYADNQPGVLIQVYE 313
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              374 NDKGRLSQGEIDRMVARAEKYKAEDEANKQRIEAKNNLENYCYSMRSTLDEEKVKDKISK 433
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            GERAMIKDNNLLGRFELSGIPPAPRGVPQIEVTFDIDANGILNVTATDKSTGKANKITIT 121
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              122 NDKGRLSKEBIERMVQEAEKYKAEDEVQRERVSAKNALESYAFNMKSAVEDEGLKGKISE 181
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                                                     and assembling/disassembling of
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              182 ADKKKVLDKCQEVISWLDANTLAEKDEFEHKRKELEQVCNPIISGLYQGAGG----PG-
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68.8%; Pred. No. 1.4e-51;
iive 33; Mismatches 43;
                                                                                                                                                                  69.5%; Score 913.5; DB 2; 66.8%; Pred. No. 8.1e-52;
                                                                                                                                                                                                                           35; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ----PGGF-GAQGPKGGSGSGPTIEEVD 258
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    494 AAGMPGGMPDMSGAAAAPGAGPTVEEVD 521
                          C;Function:
A;Description: involved in protein folding
C;Superfamily: heat shock protein 70
C;Keywords: ATP; molecular chaperone
                                                                                                                                                                                             Best Local Similarity 66.8%
Matches 179; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Conservative
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A; Residues: 1-649 < MUE>
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                                                                                                                                                                     Query Match
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C;Genetics:
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dnaK-type molecular chaperone - maize

NyAlternate names: heat shock protein 70

C;Species: Zea mays (maize)

C;Becies: Zea mays (maize)

C;Becies: 2ea mays (maize)

C;Becies: 2ea mays (maize)

C;Becies: 2ea mays (maize)

C;Becies: 2ea mays (maize)

C;Becies: 19-Nov-1988 #sequence_revision 19-Nov-1988 #text_change 09-Jul-2004

C;Accession: A25089

R;Rochester, D.E.; Winer, J.A.; Shah, D.M.

R;Rochester, D.E.; Winer, J.A.; Shah, D.M.

R;Rochester, D.E.; Winer, J.A.; Shah, D.M.

R;Rochester, D.E.; Winer, A25089

A;Accession: A25089

A;Accessio
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A;Molecule type: DNA
A;Residues: 1-521 <DUN>
A;Cross-references: UNIPROT:Q24896; EMBL:Z46964; NID:g603811; PIDN:CAA87085.1; PID:g6038
C;Genetics:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     hsp7
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                             TKDNNLLGRFELSGI PPAPRGVPQI EVTFDI DANGI LNVTATDKSTGKANKI TI TNDKGR
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S51682
dnaK-type molecular chaperone hsp70 - Eimeria maxima (fragment)
N;Alternate names: heat shock protein 70
C;Species: Eimeria maxima
C;Species: Eimeria maxima
C;Accession: S51682
R;Dunn, P.P.J.; Billington, K.J.; Bumstead, J.M.; Tomley, F.M. submitted to the RMEL Data Library, December 1994
A;Description: Isolation and sequences of cDNA clones for cytosolic and Reference number: S51682
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             7
ADKKKVLDKCQEVISWLDANTLAEKDEFEHKRKELEQVCNPIISGLYQGAGG-
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Length 645;
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                                                                                                             GFGAQGPKGGSGSGPTIEEVD 258
                                                                                                                                                                  ----APSGG-GAGPKIEEVD 644
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A;Residues: 1.644 <CON>
A;Residues: 1.644 <CON>
A;Residues: University (200265; EMBL:Z69729; NID:g1204167; FIDN:CAA93590.1; FID:g120*
R;Connor, R.; Churcher, C.M.; Barrell, B.G.; Rajandream, M.A.; Walsh, S.V.
submitted to the EMBL Data Library, February 1996
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             and assembling/disassembling of protein comple
A,Cross-references: UNIPROT:P41753; GB:U02504; NID:9407301; PIDN:AAA17562.1; PID:9407302

    fission yeast (Schizosaccharomyces pombe)

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A;Experimental source: strain 972h-; cosmid c13G7
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   SEKTQDILILIDVAPI.SIGIETAGGVMTPLIKRNTTIPTKKSEVFSTYADNQPGVLIQVFE 442
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            NDKGRLSKEEIERMVQEAEKYKAEDEVQRERVSAKNALESYAFNMKSAVEDEGLKGKISE 181
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            182 ADKKKVLDKCQEVISWLDANTLAEKDEFEHKRKELEQVCNPIISGLYQGAGGPGPGF-G 240
                                                                                                                                                                                                                                                                                                                                                                                                                                           GERAMIKDNNLLGRFELSGIPPAPRGVPQIEVTFDIDANGILNVTATDKSTGKANKITIT 121
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     dnaK-type molecular chaperone SPAC13G7.02c - fission yeast (Schizosaccharomy NiAlternate names: heat shock protein 70
CiSpecies: Schizosaccharomyces pombe
CiSpecies: 20-Jul-1996 #sequence_revision 13-Mar-1997 #text_change 09-Jul-2004
CiAccession: S67411, 137652
SF.Connor, R.; Churcher, C.M.
submitted to the EMBL Data Library, February 1996
                                                    A; Description: involved in protein folding and assembling/disassembling of C; Superfamily: heat shock protein 70 C; Keywords: ATP; molecular chaperone
                                                                                                                                                                                                                                                                                                                                                   SENVODLLLLDVAPLSLGLETAGGVMTALIKRNSTIPTKQTQIFTTYSDNQPGVLIQVYE
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                                                                                                                                                                                      Query Match
Best Local Similarity 66.2%; Pred. No. 1.8e-51;
Matches 176; Conservative 39; Mismatches 41;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           A;Status: preliminary; translated from GB/EMBL/DDBJ
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        241 AQGPKGGSGS-----GPTIEEVD 258
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  627 GMPDMGGAGAPPPASHAQGPKİEEVD 652
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Matches 177; Conservative
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A;Accession: S67431
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A; Residues: 1-644 <CO2>
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                                                                                                                                                                                                                                                                                                                                                                   duak-type molecular chaperone cahsp70 - yeast (Candida albicans)

N.Alternate names: heat shock protein 70
C.Species: Candida albicans
C.Jate: 07-May-1995 #sequence_revision 01-Sep-1995 #text_change 09-Jul-2004
C.Accession: S51712
R.Cassone, A.C.; La Valle, R.L.; Crisani, A.C.; Muller, H.M.; Bromuro, C.B.
submitted to the EMBL Data Library, February 1994
A.Description: Heat shock protein 70 KDa in Candida albicans.
A.Accession: S51712
A.Accession: A.Accession: A.Accession: A.Accession: A.Accession: A.Accession: A.Accession: A.Accession: A.Accession: A.Accession: A.Accession: A.Accession: A.Accession: A.Accession: A.Accession: A.Accession: A.Accession: A.Accession: A.Accession: A.Accession: A.Accession: A.Accession: A.Accession: A.Accession: A.Accession: A.Accession: A.Accession: A.Accession: A.Accession: A.Accession: A.Accession: A.Accession: A.Accession: A.Accession: A.Accession: A.Accession: A.Accession: A.Accession: A.Accession: A.Accession: A.Accession: A.Accession: A.Accession: A.Accession: A.Accession: A.Accession: A.Accession: A.Accession: A.Accession: A.Accession: A.Accession: A.Accession: A.Accession: A.Accession: A.Accession: A.Accession: A.Accession: A.Accession: A.Accession: A.Accession: A.Accession: A.Accession: A.Accession: A.Accession: A.Accession: A.Accession: A.Accession: A.Accession: A.Accession: A.Accession: A.Accession: A.Accession: A.Accession: A.Accession: A.Accession: A.Accession: A.Accession: A.Accession: A.Accession: A.Accession: A.Accession: A.Accession: A.Accession: A.Accession: A.Accession: A.Accession: A.Accession: A.Accession: A.Accession: A.Accession: A.Accession: A.Accession: A.Accession: A.Accession: A.Accession: A.Accession: A.Accession: A.Acce
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MyAlternate names: heat shock protein 70
Cispecias: Achlya klebsiana
Cispecias: Achlya klebsiana
Cispecias: Achlya klebsiana
Cipate: 07-Unl-1995 #sequence_revision 07-Jul-1995 #text_change 09-Jul-2004
CiAccession: A53163
RileJohn, H.B.; Cameron, L.E.; Yang, B.; MacBeath, G.; Barker, D.S.; Williams, S.A.
J. Biol. Chem. 269, 4513-4522, 1994
A;Title: Cloning and analysis of a constitutive heat shock (cognate) protein 70 gene
A;Reference number: A53163
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                                                                          NDKGRLSKEEIERWVQEAEKYKAEDEVQRERVSAKNALESYAFNMKSAVEDEGLKGKISE 181
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A,Status: nucleic acid sequence not shown
A,Molecule type: mRNA
A,Residues: 1-648 < DER>
A,Cross-references: UNIPROT:040980, GB:U08848; NID:g562005; PIDN:AAA82975.1; PID:g562006
A,Genetics:
A,Gene: HSP71.2
C,Function:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           CjAccesion: S14992
R;Roberts, J.K.; Key, J.L.
Biol. 16, 671-683, 1991
A;Title: Isolation and characterization of a soybean hsp70 gene.
A;Reference number: S14992; MUID:91329700; PMID:1714321
A;Accession: S14992
A;Molecule type: DNA
A;Residues: 1-645 < PLA>
A;Coss-references: UNIPROT:P26413; EMBL:X62799; NID:g18662; PIDN:CAA44620.1; PID:g18663
A;Genetics:
A;Gene: hsp70
A;Introns: #status absent
C;Function:
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NyAlternate names: heat shock proctein, 70K
C.Species: Glycine max (soybean)
C.Species: 13-Jan-1995 #sequence_revision 13-Jan-1995 #text_change 09-Jul-2004
                                                                                                                                                    A; Description: involved in protein folding and assembling/disassembling of C; Superfamily: heat shock protein 70 C; Keywords: ATP; heat shock; molecular chaperone; stress-induced protein
                                                                                                                                                                                                                                                                                                                                                                                                                                   DKGRLSKEEIERMVQEAEKYKAEDEVQRERVSAKNALESYAFNMKSAVEDEGLKGKISEA
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                                                                                                                                                                                                                                     Query Match
68.9%; Score 906; DB 2;
Best Local Similarity 69.0%; Pred. No. 3.2e-51;
Matches 178; Conservative 33; Mismatches 45.
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   242 Q-GPKGGSGSGPTIEEVD 258
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          631 PGGGSNGSGPGPKIEEVD 648
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Best Local Similarity
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                                                                                                                                                                                                                                                                                          RESULT 56
S14949
dnaK-type molecular chaperone hac-1 - tomato
N,Alternate names: heat shock cognate protein 70
C;Species: Lycopersicon esculentum (tomato)
C;Species: Lycopersicon esculentum (tomato)
C;Date: 13-Jan-1995 #sequence_revision 13-Jan-1995 #text_change 09-Jul-2004
C;Accession: S14949
R;Lin, T.Y.; Duck, N.B.; Winter, J.; Folk, W.R.
Plant Mol. Biol. 16, 475-478, 1991
R;Lin, T.Y.; Duck, Duck, N.B.; Winter, J.; Folk, W.R.
Plant Mol. Biol. 16, 475-479, 1991
A;Reference number: S14949; MUID:91370894; PMID:1893113
A;Recession: S14949
A;Molecule type: mRNA
A;Reserences: UNIPROT:P24629; EMBL:X54029; NID:g19255; FIDN:CAA37970.1; PID:g19256
C;Genetics:
A;Genetics:
A;Genetics:
C;Function:
C;Function:
A;Description: involved in protein folding and assembling/disassembling of protein compl
C;Superfamily: heat shock protein 70
C;Keywords: ATP; molecular chaperone
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darktype molecular chaperone HSP71.2
NyAlternate names: heat shock protein HSP71.2
NyAlternate names: heat shock protein HSP71.2
Cispecies: Pisum sativum (garden pea)
Cispecies: 14-Jul-1995 #sequence_revision 21-Jul-1995 #text_change 09-Jul-2004
Cispecies: Not Vierling, E.
Plant Mol. Biol. 27, 441-456, 1995
A;Title: Cyroplaemic HSP70 homologues of pea: differential expression in vegetative A;Reference number: S53498; MUID:95201239; PMID:7894010
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                                                    GE-RAMTKDNNLLGRPELSGIPPAPRGVPQIEVTFDIDANGILNVTATDKSTGKANKITI 120
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                                                                                                           ADKKKVLDKCQEVISWLDANTLAEKDEPEHKRKELEQVCNPIISGLYQGAGGPG--PGGP
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                                                                                                                                                                                              240 --GAQ-GPKGGSGSGPTIEEVD 258
                                                                                                                                                                                                                      DDAP-PSGGSSAGPKIEEVD 650
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A,Status: preliminary; translated from GB/EMBL/DDBJ
A,Status: preliminary; translated from GB/EMBL/DDBJ
A,Molecule type: DNA
A,Residues: 1-647 - CLYNA
A,Cross-references: UNIPROT:059855; EMBL:AL031540; PIDN:CAA20787.1; GSPDB:GN00068; SPDB::A,Experimental source: strain 972h-; cosmid c1739
B,Experimental source: strain 972h-; cosmid c1739
B,Experimental source: strain 972h-; march 1998
A,Description: S,pombe heat shock protein of HSP70 family.
A,Reference number: Z22442
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                                                                                                                                                                                                                                                                                      2 SENVODILILIDVAPLSLGLETAGGVMTALIKRNSTIPTKQTQIFTTYSDNQPGVLIQVYE
A;Cross-references: EMBL:M96661; NID:g159591; PIDN:AAC41542.1; PID:g159592 C;Genetics: A;Gene: hsp70 C;Superfamily: heat shock protein 70
                                                                                                                                                                                                                                                         1 KSENVQDLLLLDVAPLSLGLETAGGVMTALIKRNSTIPTKQTQIFTTYSDNQPGVLIQVY
                                                                                                                                                                                                                                                                                                                                                                           EGERAMTKONNLLGRFELSGIPPAPRGVPQIEVTPDIDANGILNVTATDKSTGKANKITI
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             heat shock protein 70 - fission yeast (Schizosaccharomyces pombe)
C;Species: Schizosaccharomyces pombe
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              C;Accession: T41121; T43342
Ribyne, M.; Rajandream, M.A.; Barrell, B.G.; Murphy, L.; Harris,
Ribynited to the EMBL Data Library, September 1998
A;Reference number: Z21969
                                                                                                                                           Query Match
Best Local Similarity 65.6%; Pred. No. 5e-51;
Matches 170; Conservative 43; Mismatches 44; Indels
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         A;Status: preliminary; translated from GB/EMBL/DDBJ
A;Molecule type: mRNA
A;Residues: 1-647 <KAW>
A;Cross-references: EMBL:AB012387; PIDN:BAA25322.1
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622 AQQAGGFGGRIGPIVEEVD 640
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N;Alternate names: heat shock protein hsp70A2
C;Species: Anopheles albimanus
C;Species: Anopheles albimanus
C;Species: Anopheles albimanus
C;Accession: T43730; T43729
R;Benedict, M.O; Cochburn, A.F.; Seawright, J.A.
Insect Mol. Biol. 2, 93-102, 1993
A;Title: The Hsp70 heat-shock gene family of the mosquito Anopheles albimanus.
A;Reference number: Z22652; MUID:97242549; PMID:9087548
A;Accession: T43730
A;Status: preliminary; translated from GB/EMBL/DDBJ
A;Redius: preliminary; translated from GB/EMBL/DDBJ
A;Residues: L-640 aBR>
A;Accession: T43729
A;Accession: T43729
A;Accession: T43729
A;Accession: T43729
A;Accession: T43729
A;Accession: T43729
A;Residues: L-502 aBE2>
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                                                                        DKKKVLDKCQEVISWLDANTLAEKDEFEHKRKELEQVCNPIISGLYQGAGGPGP-GFGA 241
                                                                                                                            571 EKQKIEKAVEDAIQWIEGNQMAEVDEFEDKQKELEGICNPIIAKMYQGAAGPGGDVPMGA 630
                 511 DKGRLSKEEIEKMVKDAERYKAEDEEVKKKVEAKOSLENYAYNMRNTIKDEKIGGKLSPD 570
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  2 SENVQDLLLLDVAPLSLGLETAGGVMTALIKRNSTIPTKQTQIFTTYSDNQPGVLIQVYE 61
                                                                                                                                                                                                                                                                                                                                                                                                        Cispecies: Rhizopus nigricans
Cispecies: Rhizopus nigricans
Cipate: 19-May-2000 #sequence_revision 19-May-2000 #text_change 09-Jul-2004
Cipate: 19-May-2000 #sequence_revision 19-May-2000 #text_change 09-Jul-2004
Cipate: 19-May-2000 #sequence_revision 19-May-2000 #text_change 09-Jul-2004
Cipate: 19-May-2000 #sequence.
Biochem. Biophys. Res. Commun. 265, 494-498, 1999
A;Title: Induction of Hsp70 in the fungus Rhizopus nigricans.
A;Recession: JC7132
A;Recession: JC7132
A;Retus: preliminary
A;Rocession: JC7132
A;Residues: 1-651 <CER>
A;Residues: 1-651 <CER>
A;Coss-references: UNIPROT: Q9UVM1; GB:AF188288
C;Superfamily: heat shock protein 70
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   236 -PGGFGAQGPKGGS---GSGPTIEEVD 258
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                                                                                                                                                                                                                                                                                                                                                                                      heat shock protein 70 - Rhizopus nigricans
                                                                                                                                                                                      242 QGPKGGSGSGPTIEEVD 258
                                                                                                                                                                                                                                        631 DMP--AAGAGPKIEEVD 645
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A;Residues: 1-646 <STO>
A;Cross-references: UNIPROT:Q9S9N1; GB:AE005172; NID:g6587810; PIDN:AAF18501.1; GSPDB:GN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                heat shock protein 70KD [imported] - Guillardia theta nucleomorph
C;Species: nucleomorph Guillardia theta
C;Species: nucleomorph Guillardia theta
C;Species: nucleomorph is the vestigial nucleus of a eukaryotic endosymbiont
C;Date: 10-May-2001 #sequence_revision 10-May-2001 #text_change 09-Jul-2004
C;Accession: D90093
R;Douglas, S.; Zauner, S.; Fraunholz, M.; Beaton, M.; Penny, S.; Deng, L.T.; Wu, X.; Reinature 410, 1091-1096, 2001
A;Title: The highly reduced genome of an enslaved algal nucleus.
A;Reference number: A99082; MUID:11323671; PMID:11323671
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    A;Status: preliminary
A;Molecule type: DNA
A;Residues: 1-650 «DOUJ»
A;Cross-references: UNIPROT:Q98RS1; GB:AR165818; NID:g13794501; PIDN:AAK39876.1; GSPDB:G
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 510 NDKGRLSKEBIBKWYQDABKYKABDEQVKKKVFAKNSLENYAYNMRNTIKDBKLAQKLIQ 569
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     182 ADKKKVLDKCQEVISWLDANTLAEKDEFEHKRKELEQVCNPIISGLYQG---AGG-PGPG 237
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    45; Indels
A;Reference number: A86141; MUID:21016719; PMID:11130712
A;Accession: B86295
                                                                                                                                                                                                                                            Query Match
Best Local Similarity 67.8%; Pred. No. 1.4e-50;
Matches 177; Conservative 33; Mismatches 43.
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ilarity 66.8%; Pred. No. 1.9e-50;
Conservative 39; Mismatches 45.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    238 GFGAQGPKGGSGSGPTIEEVD 258
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C;Superfamily: heat shock protein 70
                                                                                                                                                                                              C; Superfamily: heat shock protein
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nes 173; Conserv
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                                                  A;Status: preliminary
A;Molecule type: DNA
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                                                                                                                                                                          A; Map position: 1
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Best Local S:
Matches 173
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                                                                                                                                                    C;Genetics:
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       A; Accession: S18181
A; Molecule type: mRNA
A; Residues: 1-573 <SEV>
A; Cross-references: UNIPROT: Q40511; EMBL: X63106; NID: g19877; PIDN: CAA44820.1; PID: g19878
C; Genetics:
A; Gene: Nthsp70
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              C; Punction:
A; Description: involved in protein folding and assembling/disassembling of protein compl
C; Superfamily: heat shock protein 70
C; Keywords: ATP; molecular chaperone
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        hypothetical protein T24D18.14 [imported] - Arabidopsis thaliana C; Species: Arabidopsis thaliana (mouse-ear cress)
C; Species: Arabidopsis thaliana (mouse-ear cress)
C; Date: 02-Mar-2001 #sequence_revision 02-Mar-2001 #text_change 09-Jul-2004
C; Accession: B86295
R; Theologis, A.; Ecker, J.R.; Palm, C.J.; Federspiel, N.A.; Kaul, S.; White, O.; Alonso, Chin, C.W.; Chung, M.K.; Conn, L.; Conway, A.B.; Conway, A.R.; Creasy, T.H.; Dewar, K.; Nature 408, 816-820, 200
A; Hulter, J.L.; Jenkins, J.; Johnson-Hopson, C.; Khan, S.; Khaykin, E.; Kim, C.C.A.; Li, J.H.; Li, Y.; Lin, X.; Liu, S.X.; Liu, Z.A.; Luros, J.S.; Maiti, R.; Marziali, A.; Rooley, T.; Rowley, D.; Sakano, H.
A; Authors: Salzberg, S.L.; Schwartz, J.R.; Shinn, P.; Southwick, A.M.; Sun, H.; Tallon, ker, M.; Wu, D.; Yu, G.; Fraser, C.M.; Venter, J.C.; Davis, R.W.
A; Title: Sequence and analysis of chromosome 1 of the plant Arabidopsis.
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               310 QKVQDLLLLDVTPLSLGLETAGGVMTVLIPRNTTIPTKKEQIFSTYSDNQPGVL1QVXEG 369
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                DKGRLSKEEIERMVQEAEKYKAEDEVQRERVSAKNALESYAFNMKSAVEDEGLKGKISEA 182
     NDKGRLSKEEIDRMVAEAEKYKAEDEAESGRIQAKNHLESYAYSLRNSLDDPNLKDKVDA 562
                                                                                                                                                                                                                                                                                                                dnak-type molecular chaperone Nthsp70 - common tobacco (fragment)
N;Alternate names: heat shock protein 70
C;Species: Nicotiana tabacum (common tobacco)
C;Species: Nicotiana tabacum (common tobacco)
C;Date: 06-Jan-1995 #sequence_revision 06-Jan-1995 #text_change 09-Jul-2004
C;Accession: S1818
R;Severin, K; Rottke, R.; Behrens, H.; Heller, P.; Schoeffl, F.
A;Reference number: S18181
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                                                                                                                                                                             236 PGGF--GAQGPKGGSGSGPTIEEVD 258
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C;Species: Saccharomyces cerevisiae
C;Date: 30-Jun-1993 #text_change 09-Jul-2004
C;Accession: 843449; 825438; 842164; 825231; 540897
R;Clark, M.W.; Keng, T.; Storms, R.K.; Zhong, W.; Fortin, N.; Zeng, B.; Delaney, S.; Oue. 84311; 1994
A;Title: Sequencing of chromosome I of Saccharomyces cerevisiae: analysis of the 42 kbp { A;Reference number: 843441; MUID:95028152; PMID:7941740
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    A;Cross-references: UNIPROT:P10591, EMBL:L22015; NID:g1339990, PIDN:AAC04952.1; PID:g349°
A;Note: the nucleotide sequence was submitted to the EMBL Data Library, November 1993
A;Slater, M.R.; Craig, B.A.
Nucleic Acids Res. 17, 805-806, 1989
A;Title: The SSA1 and SSA2 genes of the yeast Saccharomyces cerevisiae.
A;Reference number: S20139; MUID:89128457; PMID:2644626
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                A; Description: involved in protein folding and assembling/disassembling of protein comple C; Superfamily: heat shock protein 70 C; Keywords: ATP; heat shock; molecular chaperone; stress-induced protein; transmembrane 1 F;193-209/Domain: transmembrane #status predicted <TMM>
                                                                                                                                                                                                                                                                                                                                                                                                      dnaK-type molecular chaperone SSA1 - yeast (Saccharomyces cerevisiae)
N/Alternate names: heat shock protein 70-related protein SSA1; heat shock protein YG100;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     'n
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TNDKGRLSKEEIERMVQEAEKYKAEDEVQRERVSAKNALESYAFNMKSAVEDEGLKGKIS 180
                                                                                        ---GPG 237
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A;Residues: 1.-207, 'S', 209-417,'P', 419-421,'S', 423-642 <SL2>
A;Cross.references: EMBL:X12926; NID:G312351; PIDN:CAA31393.1; PID:G312352
A;Note: this is a revision to the sequence from reference S20139
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1 KSENVQDLLLLDVAPLSLGLETAGGVMTALIKRNSTIPTKQTQIFTTYSDNQPGVLIQVY
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Note: this sequence has been revised in reference S42164
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        47;
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65.2%; Pred. No. 2.2e-50;
iive 37; Mismatches 47;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      A;Gene: SGD:SSAl; YG100; MIPS:YAL005c
A;Cross-references: SGD:S0000004; MIPS:YAL005c
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                A'Slater, M.R. submitted to the EMBL Data Library, June 1993
                                                                                                                                                                                                       GFGAQGPKGGSGSGPTIEEVD 258
                                                                                                                                                                                                                                                               GFPGGAPPAPEAEGPTVEEVD 639
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ,Status: translation not shown
,Molecule type: DNA
,Residues: 1-642 <SLA>
,Cross-references: EMBL:X12926
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Conservative
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Matches 172; Conserv
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Accession: S25438
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    A; Map position: 1L
                                                                                        181
                                                                                                                                                                                                       238
                                                                                                                                                                                                                                                               619
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   A; MCCCULE type: DNA
A; Residues: 1-639 < GOF>
A; Residues: 1-639 < GOF>
A; Residues: 1-639 < GOF>
A; Residues: 1-639 < GOF>
A; Cross-references: Extrain S288C
A; Experimental source: strain S288C
R; Duesterhoeft, A.; Floeth, M.; Heuss-Neitzel, D.; Hilbert, H.; Moestl, D.
A; Reference number: S64775
A; Reference number: S64775
A; Accession: S64775
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            compl
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          arm of yeast' chromosome XII reveals 14 human multidrug resistance protein.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    A; Residues: 1-639 <SLA>
A; Residues: 1-639 <SLA>
A; Cross-references: UNIPROT: P10592; EMBL: X12927; NID: 94545; PIDN: CAA31394.1; PID: 94546
B; Goffeau, A.; Purnelle, B.
submitted to the Protein Sequence Database, May 1996
A; Reference number: $64761
A; Accession: $64772
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                A)Description: involved in protein folding and assembling/disassembling of protein C, Superfamily: heat shock protein 70 C, Keywords: ATP; molecular chaperone
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                                                                381 ESSKTODLILLDVAPLSLGIETAGGWHTKLIPRNSTIPTKKSEVFSTYADNQPGVLIQVF 440
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                                182 ADKKKVLDKCQEVISWLDANTLAEKDEFEHKRKELEQVCNPIISGLYQGAGGPGFGGFGA 241
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               EGERAMTKDNNLLGRFELSGIPPAPRGVPQIEVTFDIDANGILNVTATDKSTGKANKITI 120
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           121 TNDKGRLSKEEIERMVQEAEKYKAEDEVQRERVSAKNALESYAFNMKSAVEDEGLKGKIS 180
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  1 KSENVQDLLLLDVAPLSLGLETAGGVMTALIKRNSTIPTKQTQIFTTYSDNQPGVLIQVY 60
                                                                                                                                                                                                                                                                                                                                        dnaK-type molecular chaperone SSA2 - yeast (Saccharomyces cerevisiae)
NyAlternate names: heat shock protein VG102; protein L0971; protein YLL024c
C;Species: Saccharomyces cerevisiae
C;Species: Saccharomyces cerevision
C;Date: 07-May-1993 #sequence revision 07-May-1993 #text_change 09-Jul-2004
C;Accession: S20139; S64772; S69383
R;Slater, Mr.; Craig, B.A.
Nucleic Acids Res. 17, 805-806, 1989
A;Title: The SSA1 and SSA2 genes of the yeast Saccharomyces cerevisiae.
A;Reference number: S20139; MUD:89128457; PMID:2644626
A;Accession: S20139
A;Status: translation not shown
A;Molecule type: DNA
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Gaps
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         submitted to the EMBL Data Library, April 1996
A; Description: The sequence of 32 kb on the left
mily and a new ABC transporter homologous to the
A; Reference number: 869380
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      A,Gene: SGD:SSA2
A,Cross-references: MIPS:YLL024c; SGD:S0003947
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  A;Molecule type: DNA
A;Residues: 72-639 <DUB>
A;Cross-references: SMBL:273129; MIPS:YLL024c
A;Experimental source: strain S288C
R;Purnelle, B.; Goffeau, A.
                                                                                                                                            242 QGPKGG--SGSGPTIEEVD 258
                                                                                                                                                                                                    632 NNEONGENDNAGPKIEEVD 650
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      A; Molecule type: DNA
A; Residues: 1-639 < PUR>
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C;Accession: 146588
R;Buchman, T.G.; Cabin, D.E.; Vickers, S.; Deutschman, C.S.; Delgado, E.; Sussman, M.M.;
Surgery 108, 559-566, 1990
A;Title: Molecular biology of circulatory shock. Part II. Expression of four groups of h
A;Reference number: 146588; MUID:90371455; PMID:1697703
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  R;MacFarlane, J.; Blaxter, M.L.; Bishop, R.P.; Miles, M.A.; Kelly, J.M.
Bur. J. Blochem. 190, 377.384, 1990
A;Title: Identification and characterisation of a Leishmania donovani antigen belonging A;Reference number: S11448; MUID:90306037; PMID:2163842
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1 KSENVQDLLLLDVAPLSLGLETAGGVMTALIKRNSTIPTKQTQIF-TTYSDNQPGVLIQV 59
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             dnaK-type molecular chaperone hsp70 - pig (fragment)
N,Alternate names: heat shock protein 70
C;Species: Sus scrofa domestica (domestic pig)
C;Species: 21-Feb-1997 #sequence_revision 21-Feb-1997 #text_change 09-Jul-2004
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         446 EGERAMTKDCHLLGTFDLSGIPPAPRGVPQIEVTFDLDANGILNVSAEEKGTGKRNQITI
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                506 TNDKGRLSKDEIERWVNDAMKYEADDRAQRDRVEAKNGLENYAYSMKNTLGDSNVSGKLD
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     EGERAMTKDNNLLGRFELSGIPPAPRGVPQIEVTFDIDANGILNVTATDKSTGKANKITI
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          1 KSENVQDLLLLDVAPLSLGLETAGGVMTALIKRNSTIPTKQTQIFTTYSDNQPGVLIQVY
                                                                                                                                                                                                                                                                                                                                                                                                                                                                         A;Description: involved in protein folding and assembling/disassembling C;Superfamily: heat shock protein 70 C;Keywords: ATP; molecular chaperone
                                                                                                                                                                                                                                                                                                            A;Residues: 1-208,'S', 210-653 <MAC2>
A;Cross-references: EMBL:X52314; NID:g9495; PIDN:CAA36551.1; PID:g9496
C;Genetics: hsc70
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   10;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Length 653;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                67.7%; Score 890; DB 2;
63.8%; Pred. No. 3.6e-50;
cive 42; Mismatches 45;
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A;Molecule type: mRNA
A;Residues: 1-379 <BUC>
                                                                                                                                                                             A;Cross-references: UNIPROT:P17804; EMBL:X52314
R;MacFarlane, J.
Bubmitted to the EMBL Data Library, April 1990
A;Reference number: S11572
A;Molecule type: DNA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             GP-----GAQGPKGGSGSGPTIEEVD 258
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              GMPDMSGMSGGAGPAGGASSGPKVREVD 653
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Matches 171; Conservative 4
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                                                                                                         A;Accession: S11448
A;Molecule type: DNA
A;Residues: 1-653 <MAC1>
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*Kesidues: 1-642 <DIE>
A;Cross-references: EMBL:U18839; NID:g603313; PIDN:AAB64658.1; PID:g603341; MIPS:YER103w
C;Genetics:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                C.Function:
A.Description: involved in protein folding and assembling/disassembling of protein compl
C.Superfamily: heat shock protein 70
C.Keywords: ATP; molecular chaperone; stress-induced protein
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     A;Molecule type: DNA
X;Residues: 1-642 <BOO>
A;Cross-referes: UNIPROT:P22202; EMBL:J05637; NID:g171726; PIDN:AAA63574.1; PID:g1717
R;Dietrich, F.S.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          and lambda clones
                                                                                                                                                                                                                                                      data-type molecular chaperone SSA4 - yeast (Saccharomyces cerevisiae)
MyAlternate names: heat shock protein SSA4; protein YER103w
MyAlternate names: heat shock protein SSA4; protein YER103w
C;Species: Saccharomyces cerevisiae
C;Date: 12-Apr-1991 #sequence_revision 12-Apr-1991 #text_change 09-Jul-2004
C;Accession: B36590; S50606
R;Boorstein, W.R.; Craig, E.A.
J. Biol. Chem. 265; 18912-18921, 1990
A;Title: Structure and regulation of the SSA4 HSP70 gene of Saccharomyces cerevisiae.
A;Reference number: A36590; MUID:91035412; PMID:2121731
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N;Alternate names: heat shock cognate protein 70
C;Species: Leishmania donovani
C;Date: 07-Apr.1994 #sequece_revision 07-Apr-1994 #text_change 09-Jul-2004
C;Accession: S11448; S11572
                                1 KSENVODLILLDVAPLSLGLETAGGVMTALIKRNSTIPTKOTQIFTTYSDNQPGVLIQVY
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            submitted to the EMBL Data Library, December 1994
A;Description: The sequence of S. cerevisiae cosmids 9747, 8198, 9781,
A;Reference number: $50606
  EADKKKVLDKCQEVISWLDANTLAEKDEFEHKRKELEQVCNPIISGLYQGAGGPG-
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 A;Gene: SGD:SSA4
A;Cross-references: MIPS:YER103w; SGD:S0000905
A;Map position: 5R
                                                                                                                                    236 -PGGFGAQGPKGGSGSGPTIEEVD 258
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                                                                                                                                                                                                   Query Match
Best Local Similarity 63.1%;
Matches 169; Conservative
                    A,Status: preliminary
A,Molecule type: DNA
A,Residues: 1-653 <QUI>
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   A; Accession: S52727
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                                                                                   C;Genetics:
A;Gene: hsp70
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N;Alternate names: heat shock protein hsp70; immunodominant antigen
C;Species: Leishmania donovani infantum
C;Species: Leishmania donovani infantum
C;Accession: S52727
R;Quijada, L.; Requence_revision 21-Jul-1995 #text_change 09-Jul-2004
C;Accession: S52727
R;Quijada, L.; Requena, J.M.; Soto, M.; Alonso, C.
submitted to the EMBL Data Library, March 1995
A;Description: In canine viscero-cutaneous leishmaniasis the anti-hsp70 antibodies A;Reference number: S52727
                                                                                                                                                                                                                                                                                                                                                 Accession: PC7036
heat shock protein 70 - Rhizopus nigricans (fragment)
C;Species: Rhizopus nigricans
C;Species: Rhizopus nigricans
C;Date: 03-Nov-2000 #sequence_revision 03-Nov-2000 #text_change 09-Jul-2004
C;Accession: PC7036
R;Cernla, B.; Cresnar. B.; Breskvar, K.
Biochem. Biophys. Res. Commun. 265, 494-498, 1999
A;Title: Induction of Hsp70 in the fungus Rhizopus nigricans.
A;Reference number: JC7132; MUID:20025372; PMID:10558896
A;Accession: PC7036
A;Accession: PC7036
A;Accession: PC7036
A;Accession: Left cER>
A;Cross-references: UNIPROT:09UVM0; GB:AF188289
C;Superfamily: heat shock protein 70
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YEGERAMTKDNNLLGRFELSGIPPAPRGVPQIEVTFDIDANGILNVTATDKSTGKANKIT 119
                                                                     120 ITNDKGRLSKBEIERMVQEAEKYKAEDEVQRERVSAKNALESYAFNMKSAVEDEGLKGKI 179
                                                                                                                                                      303
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                                                                                                                                                                                                         182 ADKKKVLDKCQEVISWLDANTLAEKDEFEHKRKELEQVCNPIISGLYQGAGG-PGPGGF- 239
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                                                                                                                                        2 SENVQDLLLLDVAPLSLGLETAGGVMTALIKRNSTIPTKQTQIFTTYSDNQPGVLIQVYE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     499 NDKGRLSKEDIERMYNDAEKFKAEDEAAARIQARNGLESYAYNLRNSLQDEKLATKIEA
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64.6%; Pred. No. 9.9e-50;
iive 42; Mismatches 45.
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Cell 21, 669-679, 1980
A.Title: Sequence of three copies of the gene for the major Drosophila heat shock induced A, Reference number: A03307; MUD:81064669; PMID:6777045
A.Accession: A03307
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                A;Residues: 1-641 <ING>
A;Cross-references: UNIPROT:Q9BIR7; GB:J01104; GB:J01105; NID:g157720; PIDN:AAD15226.1; F C;Comment: Heat shock induces the synthesis of seven proteins at five otherwise inactive pectively, code for the 70K protein. The function of heat shock proteins is unknown. C;Genetics:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    A.Description: involved in protein folding and assembling/disassembling of protein comple
C.Superfemily: heat shock protein 70
C.Keywords: ATP; heat shock; molecular chaperone; stress-induced protein
A,Cross-references: UNIPROT:Q25292; EMBL:X85798; NID:9758135; PIDN:CAA59793.1; PID:97581:
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N;Alternate names: major heat shock protein 70 2
C;Species: Drosophila melanogaster
C;Date: 31-Dec_1980 #sequence_revision 31-Dec-1980 #text_change 09-Jul-2004
                                                                                                   A; Description: involved in protein folding and assembling/disassembling of C; Superfamily: heat shock protein 70 C; Keywords: ATP; molecular chaperone
                                                                                                                                                                                                                                                                                                                                         KSENVQDLLLLDVAPLSLGLETAGGVMTALIKRNSTIPTKQTQIFTTYSDNQPGVLIQVY
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65.3%; Pred. No. 1.3e-49;
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                                                                                                                                                                                                           67.2%; Score 883; DB 2
63.1%; Pred. No. 1e-49;
iive 44; Mismatches
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Best Local Similarity 65.3%; Pred. No. 1.3e-
Matches 175; Conservative 34; Mismatches
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A;Cross-references: UNIPROT:P37899; EMBL:X72621; NID:g461335; PIDN:CAA51197.1; PID:g4613: R;Hofmann, C.J.B.; Rensing, S.A.; Haeuber, M.M.; Martin, W.F.; Mueller, S.B.; Couch, J.; Roll Gen. Genet. 243, 600-604, 1994
A;Title: The smallest known eukaryotic genomes encode a protein gene: towards an underst. A;Reference number: S45576; MUID:94268506; PMID:8208251
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 A Genome: nucleomorph
C:Function:
A:Description: involved in protein folding and assembling/disassembling of protein compl.
C:Superfamily: heat shock protein 70
C:Keywords: ATP; molecular chaperone; nucleomorph
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R;Sconzo, G.; Scardina, G.; Ferraro, M.G.
R;Sconzo, G.; Scardina, G.; Ferraro, M.G.
A;Title: Characterization of a new member of the sea urchin Paracentrotus lividus hsp70 A;Reference number: JC1391; MUID:93077053; PMID:1339375
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A;Cross-references: EMBL:X72621; NID:9461335
A;Note: the sequence is revised in GenBank entry PSHSP70, release 111.0, (PIDN:CAA51197.
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C;Species: Paracentrotus lividus (common urchin)
C;Date: 10-Jun-1993 #sequence_revision 10-Jun-1993 #text_change 09-Jul-2004
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ŏ
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        dnaK-type molecular chaperone 70IV - sea urchin (Paracentrotus lividus)
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Query Match 66.9%; Score 879; DB 2; Best Local Similarity 68.0%; Pred. No. 1.8e-49; Matches 172; Conservative 35; Mismatches 44
                                                                                                                                                                                                                                               A, Accession: 845576
A, Status: nucleic acid sequence not shown
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A; Residues: 1-639 <SCO>
                                A;Molecule type: DNA
A;Residues: 1-649 <RES>
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A;Accession: S42488
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NyAlternate names: heat shock protein 70
C;Species: nucleomorph Pyrenomonas salina
A;Note: a nucleomorph is the vestigial nucleus of a eukaryotic endosymbiont
C;Date: 13-Jan-1995 #sequence_revision 27-Jan-1995 #text_change 09-Jul-2004
C;Accession: 842488; 845576
R;Resing, S.; Hofmann, C.J.B.
R;Resing, S.; Hofmann, C.J.B.
A;Description: Smallest known eukaryotic genomes encode a protein gene: towards understa
A;Reference number: 842488
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              diak-type molecular chaperone hsp70 - carrot
Mylternate names: heat shock protein 70
Gispecies: Daucus carota (carrot)
Gispecies: Daucus carota (carrot)
Gispecies: Daucus carota (carrot)
Gispecies: Daucus carota (carrot)
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C;Superfamily: heat shock protein 70
C;Keywords: ATP; molecular chaperone
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                                TNDKGRLSKEEIERMVQEAEKYKAEDEVQRERVSAKNALESYAFNMKSAVEDEGLKGKIS 180
                                                                                                                                                      RADKKKVLDKCQEVISWLDANTLAEKDEPEHKRKELEQVCNPIISGLYQ----GAGGPG-
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67.3%; Pred. No. 1.6e-49;
iive 30; Mismatches 44.
                                                                                                                                                                                                                                                                               ----PGGFGAQGPKGGSGSGPTIEEVD 258
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621 NCGQQAGGFGGY-----SGPTVEEVD 641
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Matches 177; Conservative
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submitted to the EMBL Data Library, July 1992

A; Reference number: $36753

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A; Accession: $36753

A; Residues: 1-649 < BOO.

A; Residues: 1-649 < BOO.

A; Residues: 1-649 < BOO.

A; Cross-references: UNIPROT: P09435; EMBL: M97225; NID: g172717; PIDN: AAC37398.1; PID: g17271

B; Contreras, R.; Fiers, W.; Logghe, M.; Molemans, F.

submitted to the Protein Sequence Database, August 1994
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A;Accession: S18511
A;Molecule type: DNA
A;Molecule type: DNA
A;Molecule type: DNA
A;Cross-references: GB:D90455
R;Boorstein, W.R.; Craig, E.A.
R;Boorstein, W.R.; Craig, E.A.
A;Title: Transcriptional regulation of SSA3, an HSP70 gene from Saccharomyces cerevisiae
A;Reference number: A36334; MUID:90258922; PMID:2188113
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A;Residues: 1-35 -802>
A;Cross-references: GB:M36115; NID:g172715; PIDN:AA35097.1; PID:g172716
A;Cross-references: GB:M3.2.M.; Csank, C.
R;Martindale, D.W.; Gu, Z.M.; Csank, C.
Curr. Genet. 15, 99-106, 1989
A;Title: Isolation and complete sequence of the yeast isoleucyl-tRNA synthetase gene (IL&A;Reference number: S14459; MUID:89304140; PMID:2663194
                                                                                                                                                                                                                                                                                                                                                                                                                             dnaK-type molecular chaperone SSA3 - yeast (Saccharomyces cerevisiae)
N;Alternate names: chaperonin HSP70; heat shock protein HSP70; protein YBL06.07; protein C;Species: Saccharomyces cerevisiae
C;Date: 31-Dec-1993 #sequence_revision 31-Dec-1993 #text_change 09-Jul-2004
C;Accession: S36753; S45811; S4589; S18511; A36334; S25437; S12282; S38419
R;Boorstein, W.R.
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A; Residuces: 1-628 -LCO5-
A; Cross-references: EMBL:226879; NID:9407519; PIDN:CAA81523.1; PID:9407521
R; Nakazawa, N.; Harashima, S.; Oshima, Y.
Mol. Cell. Biol. 11, 5693-5700, 1991
A; Title: AAR2, a gene for splicing pre-mRNA of the MATal cistron in cell type control of A; Reference number: S18510; MUID:92017850; PMID:1922071
                                             182 ADKKKVLDKC-QEVISWLDANTLAEKDEFEHKRKELEQVCNPIISGLYQGAGGPG---PG 237
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A;Residues: 'RHC',602-619,'A',621-649 <MAR>
A;Cross-references: EMBL:X07886; NID:g3818; PIDN:CAA30732.1; PID:g3819
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A, Residues: 629-649 < DDNA
A, Cross references: EMBL: 235836; MIPS:YBL075c
A; Logghe, M.; Molemans, F.; Fiers, W.; Contreras, R.
feast 10, 1093-1100, 1994
A, Title: The two genes encoding yeast ribosomal protein the two genes encoding yeast signes and protein the two genes and the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the
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                                                                                                                                                                                                                || || || || || GFPGAGGAAPGADQGPSVEEVD 645
                                                                                                                                                                   238 GF-GAQGPKGGSGSGPTIEEVD 258
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Accession: S45816
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Afacession: 1-645 - ODE>
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Afacession: S71540
Afacession: S71640
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A;Residues: 4-10;137-143;158-164;221-227;329-335;362-368;388-394;425-431;573-579;609-615
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                A; Description: involved in protein folding and assembling/disassembling of protein C; Superfamily: heat shock protein 70 C; Keywords: ATP; cytosol; heat shock; molecular chaperone; stress-induced protein
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  TNDKGRLSKEEIERMVQEAEKYKAEDEVQRERVSAKNALESYAFNMKSAVEDEGLKGKIS 180
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      EADKKKVLDKCQEVISWLDANTLAEKDEFEHKRKELEQVCNPIISGLYQGAGGP---GPG 237
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           GERAMIKDNNLLGRFELSGIPPAPRGVPQIEVTFDIDANGILNVTATDKSTGKANKITIT 121
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                                                                                                                                                                                                        EGERAMTKONNLLGRFELSGIPPAPRGVPQIEVTFDIDANGILNVTATDKSTGKANKITI 120
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NyAlternate names: heat shock protein hsp72
C;Species: Pichia angusta
C;Species: Pichia angusta
C;Date: 06-Jan-1995 #sequence revision 06-Jan-1995 #text_change 09-Jul-2004
C;Accession: S41372; S71640; $\frac{5}{7}1636
R;Dissel, A.A.; Roggenkamp, R.R.
B;Dissel, A.A.; Roggenkamp, R.R.
B;Description: HSP70 genes of the yeast Hansenula polymorpha.
A;Reference number: S41372
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                                                  KSENVQDLLLLDVAPLSLGLETAGGVMTALIKRNSTIPTKQTQIFTTYSDNQPGVLIQVY
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larity 67.2%; Pred. No. 2.8e-49;
Conservative 32; Mismatches 48;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                238 GFGAQGPKGGSGSGPTIEEVD 258
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Best Local Similarity
Matches 176; Conserv
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A;Gene: HSA1; HSP72
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dnaK-type molecular chaperone hsc70 - slime mold (Dictyostelium discoideum)
N;Alternate names: heat shock cognate protein 70
C;Species: Dictyostellum discoideum
C;Species: Dictyostellum discoideum
C;Accession: 837394
C;Accession: 837394
R;Haus, U; Trommler, P: Fisher, P.R.; Hartmann, H.; Lottspeich, F:; Noegel, A.A.; Schl
EMBO J. 12, 3763-3771, 1993
A;Title: The heat shock cognate protein from Dictyostelium affects actin polymerization
A;Reference number: 837394; MUID:94008983; PMID:8404847
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A;Cross-references: UNIPROT:P36415; EMBL:X75263; NID:g433874; PIDN:CAA53039.1; PID:g4338
C;Genetics:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       185 KKVLDKCQEVISWLDANTLAEKDEPEHKRKELEQVCNPIISGLYQGAGGPG----PGGFG 240
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  65 AMTKDNNLLGRFELSGIPPAPRGVPQIEVTPDIDANGILNVTATDKSTGKANKITITNDK 124
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      382 VADLLLLDVAPLSMGLETAGGVMTTLIPRNTTIPCKKTQTFSTYSDNQPGVLIQVYEGER
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66.1%; Score 868.5; DB 2
Best Local Similarity 65.9%; Pred. No. 8.5e-49;
Matches 170; Conservative 35; Mismatches 46.
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    -RQGILRQGSTGPTIEEVD 630
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       241 AQGPKGGSGSGPTIEEVD 258
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A, Status: preliminary
A, Molecule type: mRNA
A, Residues: 1-636 < EDD>
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A;Molecule type: mRNA
A;Residues: 1-640 <HAL
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Mark-type molecular chaperone - mouse

My Alternate names: heat shock protein 70-related protein

C; Species: Mus musculus (house mouse)

C; Date: 07-Jun-1990 #sequence_revision 07-Jun-1990 #text_change 09-Jul-2004

C; Accession: A34041

R; Marsumocto, M.; Fujimoto, H.

Bjochem. Bjophys. Res. Commun. 166, 43-49, 1990

A; Title: Cloning of a hsp70-related gene expressed in mouse spermatids.

A; Accession: A34041

A; Cross-references: UNIPROT:P16627; GB:M32218

C; Function:

A; Description: involved in protein folding and assembling/disassembling of protein comple; Superfamily: heat shock protein 70

C; Keywords: ATP; molecular chaperone
                                                   protein compl
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 440 --TRQTIPDNNLVGPPDLTGIPPAP-SVPQIEVTFDIARNGILAVTAMDKSTGKANKITI 496
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          EADKKKVLDKCQEVISWLDANTLAEKDEFEHKRKELEQVCNPIISGLYQGAGGPGP---- 236
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A;Map position: 2L
C;Function:
A;Description: involved in protein folding and assembling/disassembling of ]
C;Superfamily: heat shock protein 70
C;Keywords: ATP; heat shock; molecular chaperone; stress-induced protein
                                                                                                                                                                                                                                                               TNDKGRLSKEEID-SIESRTAYKREDEGQREKIAAKNALESYAFNMKSACGDEGLKDKIT
                                                                                                                                                                                                                                         1 KSENVQDLLLLDVAPLSLGLETAGGVMTALIKRNSTIPTKQTQIFTTYSDNQPGVLIQVY
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                                                                                                                                                                                           Gaps
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                                                                                                                                          Length 649;
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                                                                                                                                        Query Match 66.5%; Score 874; DB 2; Length 64!
Best Local Similarity 63.3%; Pred. No. 3.8e-49;
Matches 171; Conservative 37; Mismatches 48; Indels
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             tch 66.4%; Score 873; DB 2; al Similarity 72.2%; Pred. No. 4.3e-49; 187; Conservative 17; Mismatches 45;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             237 -GGF-----GAQGPKGGSGSGPTIEEVD 258
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            240 GAQGPKGGSGSGPTIEEVD 258
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441

64

Gaps

7;

Indels

46;

assembling/disassembling of protein compl

DB 2; Length 640;

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Anacytype molecular chaperone hapb - slime mold (Dictyostelium discoideum) (fragment)
NyAlternate names: 70k heat shock cognate protein aginactin; F-actin capping protein agi
C;Species Dictyostelium discoideum
C;Date: 19-May-1995 #sequence_revision 19-May-1995 #text_change 09-Jul-2004
C;Accession: A48872
K;Eddy, R.J.; Sauterer, R.A.; Condeelis, J.S.
J. Biol. Chem. 268, 23267-23274, 1993
A;Title: Aginactin, an agonist-regulated F-actin capping activity is associated with an A;Reference number: A48872; MUID:94043116; PMID:8226849
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 A,Cross-references: UNIPROT:P36415; GB:L22736; NID:9433179; PIDN:AAA33219.1; PID:9433180 A,Note: authors translated the codon ACA for residue 10 as Pro, GCT for residue 60 as Va C;Function:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           A; Description: involved in protein folding and assembling/disassembling of protein compl C; Superfamily: heat shock protein 70 C; Keywords: ATP; molecular chaperone
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Length 636;
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C, Genetics:
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NiAlternate names: heat shock protein 70-related protein
C;Species: Plasmodium falciparum
C;Bate: 07-Jun-1990 #sequence_revision 07-Jun-1990 #text_change 09-Jul-2004
C;Accession: JU0164
R;Yang, Y. P.; An-ariya, P.; Sharma, Y.D.; Kilejian, A.
Mol. Bicchem. Parasitol. 26, 61-68, 1987
A;Title: The primary structure of a Plasmodium falciparum polypeptide related to heat sh A;Reference number: JU0164; MUID:88122267; PMID:2448622
A;Accession: JU0164
A;Molecule type: mRNA
A;References: UNIPROT:P11144; GB:M19753; NID:g309689; PIDN:AAA29626.1; PID:g309696
C;Function:
A;Description: involved in protein folding and assembling/disassembling of protein compl
C;Superfamily: heat shock protein 70
C;Keywords: ATP: molecular chaperone; tandem repeat
F;632-661/Region: 4-residue repeats
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                                                                             446 AMTKDNNLLGKFELSGIPPAPRGVPQVEVTFDVDANGILNVSAEDKSTGNKQKITITNDK 505
                                                                                                                                                                                                          125 GRISKBEIERMVQEAEKYKAEDEVQRERVSAKNALESYAFNMKSAVEDEGLKGKISEADK 184
                                                                                                                                                                                                                              185 KKVLDKCQEVISWLDANTLAEKDEFEHKRKELEQVCNPIISGLYQGAGGPG----PGGFG 240
                                                                                                                                                                                                                                                                                                       AMTKDNNLLGRFELSGIPPAPRGVPQIEVTFDIDANGILNVTATDKSTGKANKITITNDK 124
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                                                           64
                                                         VQDLLLLDVAPLSLGLETAGGVMTALIKRNSTIPTKQTQIFTTYSDNQPGVLIQVYEGER
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                       Gaps
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                       7;
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                       Indels
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Best Local Similarity 65.9%; Pred. No. 8.6e-49;
Matches 170; Conservative 35; Mismatches 46;
                                                                                                                                                                                                                                                                                                                                                                                626 NDSPK---SSNNKVDELD 640
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A49242 dnaK-type molecular chaperone hsp70 - Plasmodium cynomolgi

RESULT 82

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A;Status: preliminary
A;Molecule type: nucleic acid
A;Reaidues: 1-686 <BCK>
A;Reaidues: 1-686 <BCK>
A;Cross-references: UNIPROT:Q05746; GB:M90978; NID:g160349; PIDN:AAA29625.1; PID:g160350
A;Note: sequence extracted from NCBI backbone (NCBIN:118975, NCBIP:118976)
C;Function:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          CjAccession: JC6610
RjAderson, R.C.; Lindauer, K.R.; Prescott, D.M.
RjAnderson, R.C.; Lindauer, K.R.; Prescott, D.M.
RjAnderson, R.C.; Lindauer, K.R.; Prescott, D.M.
AjTille: A gene-sized DNA molecule encoding heat-shock protein 70 in Oxytricha nova.
AjReference number: JC4610; MUID:96186964; PMID:8626054
AjAccession: JC4610
AjAccession: JC4610
AjAccession: JC611
AjMD>
AjCross-references: UNIPROT:Q27150; GB:U37280; NID:g1051275; PIDN:AAB04940.1; PID:g10512
CjComment: The expression of hsp70 gene is regulated at the transcriptional level.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               A; Description: involved in protein folding and assembling/disassembling of protein completisus shock protein 70 C; Superfamily: heat shock protein 70 C; Keywords: ATP; molecular chaperone
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   9
N;Alternate names: heat shock protein hsp70
C;Species: Plasmodium cynomolgi
C;Date: 19-Dec-1993 #sequence_revision 18-Nov-1994 #text_change 09-Jul-2004
C;Accession: A49242
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 C;Species: Oxytricha nova
C;Date: 10-Apr-1996 #sequence_revision 24-May-1996 #text_change 09-Jul-2004
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1 KSENVQDLLLLDVAPLSLGLETAGGVMTALIKRNSTIPTKQTQIPTTYSDNQPGVLIQVY
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                                                                                                                                                  R;Eckert, V.; Sanchez, L.; Cochrane, A.; Enea, V.
Exp. Parasitol. 75, 323-328, 1992
A;Title: Plasmodium cynomolgi: the hsp 70 gene.
A;Reference number: A49242; MUID:93050041; PMID:1426134
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    48;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Query Match 65.8%; Score 864; DB 2;
Best Local Similarity 59.3%; Pred. No. 1.8e-48;
Matches 172; Conservative 38; Mismatches 48;
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Similarity
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Matches 172;
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A;Cross-references: UNIPROT:Q01233; EMBL:U10443; NID:g607817; PIDN:AAA82183.1; PID:g6078
C;Genetics:
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A26485
dnak-type molecular chaperone - malaria parasite (Plasmodium falciparum) (fragments)
N/Alternate names: cytoplasmic antigen
C;Species: Plasmodium falciparum
                                                                                                                                                                                                                                                                                          Hade shock protein 70 [imported] - Neurospora crassa

heat shock protein 70 [imported] - Neurospora crassa

C;Species Neurospora crassa

C;Species Neurospora crassa

C;Species Neurospora crassa

C;Species Neurospora crassa

C;Species Neurospora crassa

C;Accession: T46650

A;Reference number: 223115; MUID:95095970; PMID:7798134

A;Reference number: 223115; MUID:95095970; PMID:7798134

A;Accession: T46650

A;Status: preliminary; translated from GB/EMBL/DDBJ

A;Molecule type: DNA
           506
                                                                                                                                   999
                                                                                                                                                            KKKVLDKCQEVISWLDANTLAEKDEFEHKRKELEQVCNPIISGLYQGAGG-----PG--P 236
                                                                                                                                                                          RAMIKDNNLLGRFELSGIPPAPRGVPQIEVTFDIDANGILNVTATDKSTGKANKITITND 123
                                                                                                       KGRLSKERIERMVQEAEKYKAEDEVQRERVSAKNALESYAFNMKSAVEDEGLKGKISEAD 183
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63
                                                                  2 SENVQDLLLLDVAPLSLGLETAGGVMTALIKRNSTIPTKQTQIFTTYSDNQPGVLIQVYE
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Pred. No. 2.6e-48;
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A,Introns: 23/3; 247/1; 353/1; 360/3
C,Superfamily: heat shock protein 70
                                                                                                                                                                                                                                         527 GGMPGGFPGGAGGAAP 642
                                                                                                                                                                                                                 237 GGFGAQGPKGGSGSGP 252
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60.5%;
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Best Local Simil
Matches 159; (
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C;Accession: A26485
R;Bianco, A.E.; Favaloro, J.M.; Burkot, T.R.; Culvenor, J.G.; Crewther, P.E.; Brown, G.V
Proc. Natl. Acad. Sci. US.A. 83, 8713-8717, 1986
A;Title: A repetitive antigen of Plasmodium falciparum that is homologous to heat shock A;Reference number: A26485; MUID:87041522; PMID:3095842
A;Accession: A26485
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      A; Description: involved in protein folding and assembling/disassembling of protein compl C; Superfamily: heat shock protein 70 C; Keywords: ATP; molecular chaperone
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          61 EGERAMIKDINILLGRFELSGIPPAPRGVPQIEVTFDIDANGILNVTATDKSTGKANKITI 120
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25-Oct-1987 #sequence_revision 25-Oct-1987 #text_change 09-Jul-2004
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A;Residues: 1-313 <KUM>
A;Note: the sequence shown in Fig.2 is lacking residue 181-Asn
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  65.5%; Score 860.5; DB 2; 61.4%; Pred. No. 1.2e-48;
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Local Similarity 61.6%; Pred. No. 1.8e-48;
hes 173; Conservative 37; Mismatches 48
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Conservative 37; Mismatches
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Page 32

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A; Experimental source: strain Maracai
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N;Alternate names: heat shock protein 70
S;Species: Trypanosoma cruzi
C;Species: Trypanosoma cruzi
C;Spec
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  A;Status: translated from GB/EMBL/DDBJ
A;Status: translated from GB/EMBL/DDBJ
A;Status: translated from GB/EMBL/DDBJ
A;Status: 1-465 <REN>
A;Residues: 1-465 <REN>
A;Cross-references: UNIPROT:P93662; EMBL:X90949
C;Genetics:
A;Gene: hsp70
C;Function:
A;Gene: nsp70
C;Function:
C;Function:
C;Function: Involved in protein folding and assembling/disassembling of protein compl
C;Superfamily: heat shock protein 70
C;Keywords: ATP; molecular chaperone
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C;Species: Cyanophora paradoxa
C;Species: Cyanophora paradoxa
C;Date: 13-Aug-1999 #text_change 09-Jul-2004
C;Accession: T07620
R;Rensing, S.A.; Obrdlik, P.; Rober-Kleber, N.; Mueller, S.B.; Hofmann, C.J.; van de Bur, J. Phycol. 32, 279-285, 1997
A;Title: Molecular phylogeny of the stress-70 protein family with certain emphasis on A;Reference number: Z16057
A;Accession: T07620
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   263 EGERAGTKONNLLGKFELSGIPPAPR-VPQIEVTFDLDANGILNVSAEDKTTGNRQKITI 321
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              TNDKGRLSKEEIERMVOEAEKYKAEDEVORERVSAKNALESYAFNMKSAVEDEGLKGKIS 180
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                EADKKKVILDKCQEVISWLDANTLAEKDEFEHKRKELEQVCNPII-SGLYQGAGG--PGPG 237
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                                                                                                     EADKKKVLDKCQEVISWLDANTLAEKDEFEHKRKELEQVCNPIISGLYQ
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                                                                                                                                                                                                                                          258
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                                                                                                                                                                                                                                          234 -----PGGFGAQGPKGG--SGSGPTIEEVD
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         DB 2;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        238 GF-GAQG--PKGGSGSGPTIEEVD 258
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    GFPGARGRPEEGRGGKGPVIEEVD 465
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A; Molecule type: DNA
A; Residues: 222-473, 'L', 475-521,550-622,'A', 624-630,'S', 632-680 <REQ>
A; Residues: 222-473, 'L', 475-521,550-622,'A', 624-630,'S', 632-680 <REQ>
A; Cross-references: GB:X73690; NID:g10621; PIDN:CAA30115.1; PID:g10622
A; Experimental source: strain Maracai
A; Note: the sequence is revised in GenBank entry TCHSP70, release 111.0, (FIDN:CAA30115.1)
B; Yang, S; Bergman, L.W.; Scholl, D.R.; Rowland, B.C.
B; Wang, S; Bergman, L.W.; Scholl, D.R.; Rowland, B.C.
A; Description: Cloning and characterization of cDNA encoding glucose-regulated protein 76
A; Reference number: S25648
A; Accession: S25649
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        A; Molecule type: mRNA
A; Residues: 1-46, T', 48-63, T', 65, 'SP', 68-167, 'M', 169-178, 'R', 180-240, 'S', 242-256, 'T', 258
B; Residues: 1-46, T', 48-63, T', 65, 'SP', 68-167, 'M', 169-178, 'R', 556-557, 'E', 559-570, 'N', 572-58, A; Cross-references: EMBL:X67716; NID:910625; PIDN:CRA47952.1; PID:910626
A; Experimental source: strain Brazil
A; Experimental source: strain Brazil
Mol. Biochem. Parasitol. 37, 285-287, 1889
A; Title: Comparison of HSP70 genes from two strains of Trypanosoma cruzi.
A; Reference number: A44979; MUID:90114336; PMID:2691890
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A;Status: preliminary
A;Molecule type: DNA
A;Residues: 1-46, T', 48-63, T', 65-167, M', 169-240, 'S', 242-256, 'T', 258, 'SQ', 261-310, 'D', 31
'SQ', 532-533, 'E', 535, 'RER', 539-551, 'V', 553-554, 'T', 556-557, 'E', 559-570, 'N', 572-581, 'Q', 581
A;Cross-references: GB:M5659; NID:g162116; PIDN:AAA30205.1; PID:g162117
A;Experimental source: strain Peru
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R;Requena, J.M.; Lopez, M.C.; Jimenez-Ruiz, A.; de la Torre, J.C.; Alonso, C. Mucleic Acids Ree. 16, 1393-1406, 1988
A;Title: A head-to-tail tandem organization of hsp70 genes in Trypanosoma cruzi. A;Reference number: A28531; MUID:88157703; PMID:2831499
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N;Alternate names: allergen Cla h IV; heat shock protein 70
C;Species: Cladosporium herbarum
C;Date: 19-Mar-1997 #sequence_revision 19-Mar-1997 #text_change 09-Jul-2004
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Local Similarity 57.8%; Pred. No. 1.1e-47;
hes 170; Conservative 40; Mismatches 48
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R;Zhang, L.
submitted to the EMBL Data Library, September 1994
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A; Description: involved in protein folding and assembling/disassembling of protein compl: C; Superfamily: heat shock protein 70 C; Keywords: ATP; molecular chaperone
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R;Kobayashi, T.; Kobayashi, E.; Sato, S.; Hotta, Y.; Miyajima, N.; Tanaka, A.; Tabata, DNA Res. 1, 15-26, 1994
A;Title: Characterization of cDNAs induced in meiotic prophase in lily microsporocytes. A;Reference number: PC2136; MUID:96051386; PMID:7584025
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           387 KSKQTEGLLLDVAPLTLGIBTAGGVMTALIKRNTTIPTKKSQIFSTYSDNQPGVHIQVF 446
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  181 EADKKKVLDKCQEVISWLDANTLAEKDEFEHKRKELEQVCNPIISGLYQGAGGPGFGGFG 240
                                                                                                               dnaK-type molecular chaperone - Trypanosoma brucei
N;Alternate names: heat shock protein 70
C;Species: Trypanosoma brucei
C;Date: 19-Nov-1988 #sequence_revision 19-Nov-1988 #text_change 09-Jul-2004
C;Accession: A25398
R;Glass, D.J.; Polvere, R.I.; Van der Ploeg, L.H.T.
Mol. Cell. Biol. 6, 4657-4666, 1986
A;Title: Conserved sequences and transcription of the hsp70 gene family in TA;Reference number: A25398; MUID:87089827; PMID:3796613
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C;Species: Lilium longiflorum (trumpet lily)
C;Date: 04-Sep-1998 #sequence_revision 04-Sep-1998 #text_change 09-Jul-2004
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1 KSENVQDLLLLDVAPLSLGLETAGGVMTALIKRNSTIPTKQTQIFTTYSDNQPGVLIQVY
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        A;Molecule type: DNA
A;Residues: 1-661 <GLA>
A;Cross-references: UNIPROT:P11145; GB:M14697
                                                                                                                                                                                                241 AQGPKGGS----GSGPTIEEVD 258
                                                                                                                                                                                                                             AGFPGGAAPPPQSSGPTVEEVD 646
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    A;Molecule type: mRNA
A;Residues: 1-651 <KOB>
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                                  505
                                                                                                                                                                                                                                                      625
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  A; Description: Sequence and IgE-binding sites of an allergen, Cla h IV, or Cladosporlum A; Reference number: S49303
A; Accession: S49303
A; Accession: S49303
A; Molecule type: mRNA
A; Residues: 1-643 < ZHA>
A; Cross-references: UNIPROT: P40918; EMBL: X81860; NID: g551227; PIDN: CAA57452.1; PID: g5512
A; Experimental source: tissue type mycelia
C; Genetics:
A; Experimental source: tissue type mycelia
C; Genetics:
A; Experimental source: tissue type mycelia
C; Chuction:
A; Description: involved in protein folding and assembling/disassembling of protein compl C; Superfamily: heat shock protein 70
C; Keywords: ATP; heat shock; molecular chaperone; stress-induced protein
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       A44985
Manak-ype molecular chaperone 70.1 - Theileria annulata
MyAlternate names: heat shock protein 70.1
C;Species: Theileria annulata
C;Species: Theileria annulata
C;Date: 28-Apr-1993 #sequence_revision 28-Apr-1993 #text_change,07-May-1999
C;Accession: A44985
R;Mason, P.J.; Shiels, B.R.; Tait, A.; Beck, P.; Hall, R.
Myl. Biochem. Parasitol. 37, 27-36, 1989
A;Title: Sequence and expression of a gene from Theileria annulata coding for a 70-kilod A;Reference number: A44985; MUID:90136713; PMID:2515435
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  A;Status: preliminary
A;Molecule type: DNA
A;Molecule type: DNA
A;Rolecule type: DNA
A;Rolecule type: DNA
A;Ross-treferences: GB:J04653
C;Function:
C;Function: involved in protein folding and assembling/disassembling of protein compl
C;Superfamily: heat shock protein 70
C;Keywords: ATP; molecular chaperone
Description: Sequence and IgE-binding sites of an allergen, Cla h IV, of Cladosporium
                                                                                                                                                                                                                                                                                                                                                                                                                                                    2
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       EGERAMTKDNNLLGRFELSGIPPAPRGVPQIEVTFDIDANGILNVTATDKSTGKANKITI 120
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             121 TNDKGRLSKEBIERMVQEAEKYKAEDEVQRERVSAKNALESYAFNMKSAVEDEGLKGKIS 180
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     GERAMTKDNNLLGRFELSGIPPAPRGVPQIEVTFDIDANGILNVTATDKSTGKANKITIT 121
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  NDKGRLSKEEIERMVQEAEKYKAEDEVQRERVSAKNALESYAFNMKSAVEDEGLKGKISE 181
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               182 ADKKKVLDKCQEVISWLDANTLAEKDEFEHKRKELEQVCNPIISGLYQGAGGPGFGFGA 241
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1 KSENVQDLLLLDVAPLSLGLETAGGVMTALIKRNSTIPTKQTQIFTTYSDNQPGVLIQVY 60
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          2 SENVQDLLLLDVAPLSLGLETAGGVMTALIKRNSTIPTKQTQIFTTYSDNQPGVLIQVYE
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                                                                                                                                                                                                                                                                                                                                                                                             DB 2; Length 643;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                    Indels
                                                                                                                                                                                                                                                                                                                                                                                          tch 64.1%; Score 842.5; DB 2; al Similarity 61.7%; Pred. No. 4.1e-47; 161; Conservative 45; Mismatches 50;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            QG----PKGGSGSGPTIEEVD 258
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Query Match
Best Local S:
Matches 161
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A,Cross-references: UNIPROT:Q03929; EMBL:X58715; NID:g10623; PIDN:CAA41551.1; PID:g10624
                                                                                                      dnaK-type molecular chaperone hsc70 [imported] - slime mold (Dictyostellum discoideum) NAlternate names: heat shock cognate protein 70 c. Species: Dictyostellum discoideum c. Species: Dictyostellum discoideum c. Date: 31-Jan-2000 #sequence_revision 31-Jan-2000 #text_change 09-Jul-2004
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            AMTKDNNLLGRFELSGIPPAPRGVPQIEVTFDIDANGILNVTATDKSTGKANKITITNDK 124
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       GRLSKEEIERMVQEAEKYKAEDEVQRERVSAKNALESYAFNMKSAVEDEGLKGKISEADK 184
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            KKVLDKCQEVISWLDANTLAEKDEFEHKRKELEQVCNPIISGLYQGAGGPGPGFGFGAQGP 244
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                dnaK-type molecular chaperone hsp70 - Trypanosoma cruzi (fragment)
NiAlternate names: heat shock protein 70
CiSpecies: Trypanosoma cruzi
CiSpecies: 07-Apr-1994 #sequence_revision 07-Apr-1994 #text_change 09-Jul-2004
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          387 VADILLLDVAPLSMGLETAGGVMTTLIPRNTTIPCKKNQTFSTYSDNQTGVLVQVYEGER
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         5 VQDLLLLDVAPLSLGLETAGGVMTALIKRNSTIPTKQTQIFTTYSDNQPGVLIQVYEGER
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Riley Yeyati, P.; Lafon, S.; Bonnefoy, S.; Levi, M. submitted to the EMBL Data Library, April 1991
A;Description: Nucleotide sequence of a Trypanosoma cruzi HSP-70 c-DNA. A;Reference number: S14875
A;Accession: S14875
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           17;
                                                                                                                                                                                                                                                                                                                                                                     A;Molecule type: mRNA
A;Residues: 1-632 <BOV>
A;Cross-references: UNIPROT:015766; EMBL:AF025951; PIDN:AAB81865.1
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                                                                                                                                                                                                             C;Accession: T45471
R;Boves, H.; Mintert, U.; Dittrich, W.; Faix, J.; Gerisch, G. submitted to the EMBL Data Library, September 1997
A;Reference number: Z22980
A;Accession: T45471
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        62.7%; Score 824; DB 2; ilarity 63.0%; Pred. No. 6.4e-46; Conservative 40; Mismatches 46
                                                                                                                                                                                                                                                                                                                                               A;Status: preliminary; translated from GB/EMBL/DDBJ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            A,Note: localized to filopodias and cortex C,Superfamily: heat shock protein 70
                                                                                                                                                                                                                                                                                                                                                                                                                                                   A; Experimental source: strain AX3
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Matches 160; Conserv
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A; Residues: 1-261 <LEV>
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        protein compl
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C;Superfamily: heat shock protein 70
C;Keywords: ATP; heat shock; molecular chaperone; stress-induced protein
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HHUWTB
dnaK-trype molecular chaperone - lettuce downy mildew
N;Alternate names: heat shock protein 70
C;Species: Bremia lactucae (lettuce downy mildew)
C;Species: Bremia lactucae (lettuce downy mildew)
C;Date: 31-Mar-1990 #sequence_revision 31-Mar-1990 #text_change 09-Jul-2004
C;Accession: JU0062
R;Judelson, H.S.; Michelmore, R.W.
Gene 79, 207-217, 1989
A;Itle: Structure and expression of a gene encoding heat-shock protein Hsp70 from A;Reference number: JU0062; MUID:9006750; PMID:2792764
A;Accession: JU0062
A;Molecule type: DNA
A;Residues: 1-675 <JUD>
A;Residues: 1-675 <JUD>
A;Comment: This fungus causes downy mildew disease in lettuce.
C;Function:
                                                                                                                                                             2
                                                                                                                                                                                                                                              EGERAMTKDNNLLGRFELSGIPPAPRGVPQIEVTFDIDANGILNVTATDKSTGKANKITI 120
                                                                                                                                                                                                                                                                                                                                                  TNDKGRLSKEEIERWVQEAEKYKAEDEVQRERVSAKNALESYAFNMKSAVEDEGLKGKIS 180
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       GERAMTKONNLLGRFELSGIPPAPRGVPQIEVTFDIDANGILNVTATDKSTGKANKITIT 121
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     οĘ
                                                                                                                                                                                                             1 KSENVQDLLLLDVAPLSLGLETAGGVMTALIKRNSTIPTKQTQIFTTYSDNQPGVLIQVY
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                                                                                                                                                             Gaps
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A;Description: involved in protein folding and assembling/disassembling C;Superfamily: heat shock protein 70 C;Keywords: ATP; molecular chaperone
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   33;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                DB 1; Length 675;
                                                                                                    Length 651;
                                                                                                      ; Score 837; DB 2; Length 651; Pred. No. 9.6e-47; 36; Mismatches 50; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   52; Indels
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 GPGGFGAQGPKGGSGSGPTIEEVD 258
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                                                                                                    Cuery Match 63.7%;
Best Local Similarity 63.6%;
Matches 168; Conservative 36
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A, Status: preliminary
A, Molecule type: nucleic acid
A, Residues: 1-656 -ORT-
A, Esperimenta: 1-656 -ORT-
A, Experimenta: SFL-3, trophozoites
A, Experimenta: source: SFL-3, trophozoites
A, Note: sequence extracted from NCBI backbone (NCBIN:117218, NCBIP:117219)
                                                                                                                                                                                                                                                                                                                               A;Description: involved in protein folding and assembling/disassembling of protein compl C;Superfamily: heat shock protein 70 C;Keywords: ATP; molecular chaperone
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     A;Cross-references: UNIPROT:Q9XTL8; EMBL:Z83108; PIDN:CAB05507.1; GSPDB:GN00020; CESP:F4
A;Experimental source: clone F44E5
                                                                                             heat shock protein of Entamoeba
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        186 KVLDKCQEVISWLDANTLAEKDEFEHKRKELEQVCNPIISGLYQGAGGPG-----PGGF 239
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       A;Residues: 1-645 <W12>
A;Cross-references: EMBL:Z83108; PIDN:CAB05508.1; GSPDB:GN00020; CESP:F44E5.5
A;Experimental source: clone F44E5
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01-Dec-1993 #sequence_revision 18-Nov-1994 #text_change 09-Jul-2004
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       MIXDNNLLGRFELSGIPPAPRGVPQIEVTFDIDANGILNVTATDKSTGKANKITITNDKG
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                                                 G.; Scheiner,
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                                                                                                                                                                                                                                                                                                                                                                                                                               Length 656;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                           49; Indels
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                   C;Accession: A48439
R;Ortner, S.; Plaimauer, B.; Binder, M.; Wiedermann, G.;
Mol. Biochem. Parasitol. 54, 175-183, 1992
A;Title: Humoral immune response against a 70-kilodalton A;Reference number: A48439; MUID:93063033; PMID:1435858
A;Accession: A48439
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          hypothetical protein F44E5.4 - Caenorhabditis elegans
C;Species: Caenorhabditis elegans
                                                                                                                                                                                                                                                                                                                                                                                                                          Query Match 60.7%; Score 798; DB 2; Best Local Similarity 59.8%; Pred. No. 3.2e-44; Matches 159; Conservative 44; Mismatches 49;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           submitted to the EMBL Data Library, November 1996
Freference number: 219526
A.Accession: 122169
A.Status: preliminary; translated from GB/EMBL/DDBJ
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          240 GAQG--PKG----GSGSGPTIEEVD 258
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       PGAGAAPQGNAQPKSSGKGPTIEEVD 656
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      A; Gene: CESP: F44E5.4; CESP: F44E5.5
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Residues: 1-645 <WIL>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  A; Molecule type: DNA
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Matches 159;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               dnaK-type molecular chaperone Hsp70 [imported] - bloodfluke planorb
N;Alternate names: heat shock protein 70
C;Species: Blomphalaria glabrata (bloodfluke planorb)
C;Date: 31-Jan-2000 #sequence_revision 31-Jan-2000 #text_change 09-Jul-2004
C;Accession: T45468
R;Yoshino, T.P.; Wu, X.J.; Liu, H.D.
Submitted to the EMBL Data Library, November 1997
A;Description: Transfection and heat-inducible expression of a molluscan promoter-lucife
A;Reference number: Z22978
A;Accession: T45468
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                                                                                                                                              SPKDTVLNACSSTLKWLDNNSLAEKEEYEDKLKEIQKLSSSVMAKLHSQGG-----SA 619
                                                                                                                                                                                                              MVQEAEKYKAEDEVQRERVSAKNALESYAFNMKSAVEDEGLKGKISEADKKKVLDKCQEV 194
                                                                                                                                                                                                                                                                                                      195 ISWLDANTLAEKDEFEHKRKELEQVCNPIISGLYQ--GAGGPGGFGAQGPKG----- 246
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ADKKKVLDKCQEVISWLDANTLAEKDEFEHKRKELEQVCNPIISGLYQGAGGPGPGFGA 241
                                                                                                                 75 RFELSGIPPAPRGVPQIEVTFDIDANGILNVTATDKSTGKANKITITNDKGRLSKEEIER 134
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                           74
                                            2 SENVODLILLDVAPLSLGLETAGGVMTALIKRNSTIPTKOTQIFTTYSDNQPGVLIQVYE
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*Modecule type: DNA
A;Residues: 1-65: 670S>
A;Cross-references: UNIPROT:044343; EMBL:AP025477; PIDN:AAB99911.1
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A48439
dnaK-type molecular chaperone Hsp70 - Entamoeba histolytica
N;Alternate names: heat shock protein Hsp70
C;Species: Entamoeba histolytica
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              DB 2;
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Pred. No. 2e-45;
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                                                                                                                                                                                                                                                                                                                                                                                                    247 -----GSGSGPTIEEVD 258
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        A; Experimental source: strain PR albino
                                                                                                                                                                                                                                                                                                                                                                                                                                                241 GGMPGGANPSSSSGPKVEEVD 261
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             C, Superfamily: heat shock protein 70
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62.3%;
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Species: Caenorhabditis elegans

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                                                                                                                                                                                                                                                                                                                                                                                                                                                    probable heat shock protein [imported] - Arabidopsis thaliana
C;Species: Arabidopsis thaliana (mouse-ear cress)
C;Date: 02-Mar-2001 #sequence_revision 02-Mar-2001 #text_change 09-Jul-2004
C;Accession: H96605
R;Theologis, A.; Ecker, J.R.; Palm, C.J.; Federspiel, N.A.; Kaul, S.; White, O.; Alonso, Chin, C.W.; Chung, M.K.; Conn, L.; Conway, A.B.; Conway, A.R.; Creasy, T.H.; Dewar, K.; ansen, N.F.; Hudhes, B.; Huizar, L.
Nature 408, 816-820, 2000
A;Authors: Hunter, J.L.; Jenkins, J.; Johnson-Hopson, C.; Khan, S.; Khaykin, E.; Kim, C. C.A.; Li, J.H.; Li, Y.; Liu, X.; Liu, Z.A.; Lucos, J.S.; Maiti, R.; Marziali, Rizzo, M.; Rooney, T.; Schwartz, J.R.; Shin, P.; Southwick, A.W.; Sun, H.; Tallon, ker, M.; Wu, D.; Yu, G.; Fraser, C.M.; Venter, J.C.; Davis, R.W.
A;Title: Sequence and analysis of chromosome 1 of the plant Arabidopsis.
A;Reference number: A86141; MUID:21016719; PMID:11130712
A;Accession: H96605
A;Reference in park
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        A;Cross-references: UNIPROT:Q9C7X7; GB:AE005173; NID:g11024845; PIDN:AAG26930.1; GSPDB:G
                    121 TNDKGRLSKEEIERMVQEAEKYKAEDEVQRERVSAKNALESYAFNMKSAVEDEGLKGKIS 180
                                                                                                                                                                               181 EADKKKVLDKCQEVISWLDANTLAEKDEFEHKRKELEQVCNPIISGLYQG-----A 231
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563 TEDASRAKEAVDETLRWIDSNSLAEKDEIEAKDKELKSVCQSILITKMHQSGQSSASAGCA 622
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                                                                                                                                                                                                                                                                                                                                                           GNPGTAGFNPNNYPQ-----GPTVEEVD 645
                                                                                                                                                                                                                                                                                                                    GGPGPGGFGAQG-PKGGSGSGPTIEEVD 258
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C,Superfamily: heat shock protein 70
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A;Residues: 1-617 <STO>
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T19211 hypothetical protein C12C8.1 - Caenorhabditis elegans

RESULT 100

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A;Cross-references: UNIPROT:045246; EMBL:Z81467; PIDN:CAB03871.1; GSPDB:GN00019; CESP:C1; A;Experimental source: clone C12C8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           233
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                385 KDDIIKDVILVDVVPLSHGIETAGGVMTNLIDRNTRIPAKASKTFTTYADNQPGVSIQVY 444
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 120
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       562
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             121 TNDKGRLSKEEIERMVQEAEKYXAEDEVQRERVSAKNALESYAFNMKSAVEDEGLKGKIS 180
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    C;Date: 15-Oct-1999 #sequence_revision 15-Oct-1999 #text_change 09-Jul-2004
C;Accession: T19211
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |:||||||: :|:||| ||:::: || ||:|:::| ||:|||:|| ||:|::|
505 RNEKGRLSQADIDRWVNEAKQFEREDAAQRDRISSRNQLEAYAFQVKQALEEHG--SLLS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           181 EADKKKVLDKCQEVISWLDANTLAEKDEFEHKRKELEQVCNPIISGLYQ------GAGG
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1 KSENVQDLLLLDVAPLSLGLETAGGVMTALIKRNSTIPTKQTQIFTTYSDNQPGVLIQVY
                                                                                                                                                                                                                                                                                                                                                                                                                                                         Gaps
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                                                                                                                                                                                                                                                                                                                                                                                                            Length 643;
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                                                                                                                                                                                                                                                                                                                                                                                                                 .5;
2e-43;
49;
                                                                                                                                                                                                                                                                                                                                                                                                          DB 2;
                                                                                                                                          A;Status: preliminary; translated from GB/EMBL/DDBJ
                                                    submitted to the EMBL Data Library, November 1996
A;Reference number: Z19091
A;Accession: T19211
                                                                                                                                                                                                                                                                                                                                                                                                       Match 59.8%; Score 785.5; Local Similarity 56.4%; Pred. No. 2e-4 ies 150; Conservative 52; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      PGPGGFGAQG-PKGGSGSGPTIEEVD 258
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 PGSGGFHSSNYPO----GPTVEEVD 643
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                                                                                                                                                                                                                                                                                                              A;Map position: 1
A;Introns: 25/3; 358/3
C;Superfamily: heat shock protein 70
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                                                                                                                                                                                    1-643 <WIL>
                                                                                                                                                                                                                                                                                     A, Gene: CESP:C12C8.1
                                                                                                                                                                 A; Molecule type: DNA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 61
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Rat HSp70
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Mouse HSP
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                                   6, 2005, 16:52:37; Search time 174 Seconds (without alignments) 573.472 Million cell updates/sec
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                                                                                                                                                                                                                                                                              Human H
Human F
                                                         US-09-646-835-1_COPY_384_641
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1 KSENVQDLLLLDVAPLSLGL.....FGAQGPKGGSGSGPTIEEVD
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Aae12286

Abu89711

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                                                                                                         Fotal number of hits satisfying chosen parameters:
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Maximum Match 100%
Listing first 100 summaries
                          protein search, using sw model
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AAR12986
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ABR40399
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AAB23652
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Human pro Human Pro

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Xenopus 1 Drosophil Antagonis Human sch Human dis

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Proteins AAW54149-W54364 are examples of proteins produced in the endometrium during the hyperplasia, adenocarcinoma or proliferative phase of the endometrium. The presence and quantities of these proteins can be detected using 2D gel electrophoresis comparison of cell lysates. The proteins can be used as blochemical markers to detect the phase of the endometrium and can be measured in body fluids, obviating the need for endometrial biopsies
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               623
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                                                                                                                                                                                                                                                                                                                                                                                                                              Biochemical markers of human endometrium - useful for, e.g. diagnosis of
            Human NF-
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        EADKKKVLDKCQEVISWLDANTLAEKDEFEHKRKELEQVCNPIISGLYQGAGGPGPGFG
  Protein
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Adp12947 E
Adr14395 F
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                                                                                                                                                                                                Endometrium; hyperplasia; adenocarcinoma; proliferative phase;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Length 641;
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Pred. No. 8.8e-101;
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                                                ALIGNMENTS
 ADP12947
ADR14395
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                                                                                                                                                                                                           gel electrophoresis; detection
                                                                                                                                                                                                                                                                                                                                                              CLINICAL & BASIC RES
                                                                                                                                                                           Human heat shock 70 kD protein 1.
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        241 AQGPKGGSGSGPTIEEVD 258
                                                                                                        AAWS4349 standard; protein; 641
                                                                                                                                                                                                                                                                                                                                                                                                                                              hyperplasia and adenocarcinoma.
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100.0%;
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  ထထ
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  643
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Best Local Similarity
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                                                                                                                                                                                                                                                                                                                                                                                    Byrjalsen I,
                                                                                                                                                                                                                                     Homo sapiens
                                                                                                                                                                                                                                                         WO9810291-A1
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                                                                                                                               AAW54349;
                                                                                            RESULT 1
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The present invention describes a fused protein (1) prepared from a peptide containing a CTL (cytotoxic T lymphocyte) epitope recognised by cytotoxic T cells and a protein containing the Afrasae domain of a heat shock protein. Also described are: (1) a drug composition containing (1) as active ingredient; (2) a DNA encoding (1); (3) an expression vector containing the DNA of (2); and (4) a transformant which can retain the proteoxoacide activities, and can be used as cellular immune response inducer. The protein is useful as an active ingredient for drug compositions in preventing and/or treating infectious diseases such as malaria or cancer e.g. to provide systemic immunity against leukaemia. The present sequence represents a specifically claimed heat shock protein for use in a fused protein of the present invention
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        TNDKGRLSKERIERMVQEAEKYKAEDEVQRERVSAKNALESYAFNMKSAVEDEGLKGKIS 180
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               EGERAMTKONNLLGRFELSGI PPAPRGVPQIEVTFDI DANGILNVTATDKSTGKANKITI
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       EGERAMTKDNNLLGRFELSGIPPAPRGVPQIEVTFDIDANGILNVTATDKSTGKANKITI
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        1 KSENVQDLLLLDVAPLSLGLETAGGVMTALIKRNSTIPTKQTQIFTTYSDNQPGVLJQVY
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Fused protein capable of inducing cellular immune response, useful as active ingredient for drug compositions in preventing and/or treating infectious diseases such as malaria or cancer.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ;
0
                                                                                                                                                                                                                                  ATPase; Hsp70; heat shock protein; cytotoxic T lymphocyte; CTL; immune response; infectious disease; malaria; cytotoxic T cell; cytostatic; immunostimulant; cellular immune response inducer;
                                                                                                                                                                                                    Human heat shock protein Hsp70.1 protein sequence SBQ ID NO:4.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Length 641;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         100.0%; Score 1314; DB 3;
100.0%; Pred. No. 8.8e-101;
ive 0; Mismatches 0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Claim 3; Page 46-48; 72pp; Japanese
                                                                                                     AAB23652 standard; protein; 641 AA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         8
                                                                                                                                                                                                                                                                                          protozoacide; leukaemia; cancer.
                     641
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       (SUME ) SUMITOMO ELECTRIC IND
                                                                                                                                                                                                                                                                                                                                                                                                                          18-FEB-2000; 2000WO-JP000941.
                                                                                                                                                                                                                                                                                                                                                                                                                                                         99JP-00041535.
624 AQGPKGGSGSGPTIEEVD
                                                                                                                                                                      (first entry)
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Best Local Similarity 100.0
Matches 258; Conservative
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Sequence 641 AA;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                           19-FEB-1999;
                                                                                                                                                                        05-JAN-2001
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Pharmaceutical composition, used to treat or prevent infection or cancer, comprises a complex comprising a heat shock protein-binding fragment associated with a molecule displaying antigenicity of an infectious agent
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    The present sequence is that of human heat shock protein (HSP) Hsp71, an inducible form of a Hsp70 family protein. The invention relates to complexes of peptide-binding fragments of HSPs with antigenic molecules and their use in immunotherapy for the treatment of infectious diseases and cancer. Claimed methods of treating or preventing cancer/infectious disease involve culturing a cancer cell/infected cell transformed with a nucleic acid encoding a HSP peptide-binding domain, recovering complexes of the HSP fragments noncovalently associated with peptides from the cancer cell/infected cell, and administering the recovered complexes. These methods can use Hsp71 peptide-binding fragments comprising amino acids 391-615 and 400-440 of the present sequence, i.e. the peptide-binding core
                   RADKKKVLDKCQEVISWLDANTLAEKDEFEHKRKELEQVCNPIISGLYQGAGGPGGFG
 RADKKKVLDKCQEVISWLDANTLARKDEFEHKRKELEQVCNPIISGLYQGAGGPGPGFG
                                                                                                                                                                                                                                                                                             Hsp71; human; heat shock protein; immunotherapy; therapy; cancer; infection; vaccine.
                                                                                                                                                                                                                                                                                                                                                                                                     "peptide-binding domain"
                                                                                                                                                                                                                                                                                                                                                                                                                                /note= "beta-helix motif"
400. .440
/note= "peptide-binding core"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       (UYCO-) UNIV CONNECTICUT HEALTH CENT.
                                                                                                                                                                                                                                                                                                                                                                        Location/Qualifiers
                                                                                                                                                                     AAB82534 standard; protein; 641 AA.
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                                                                              AQGPKGGSGSGPTIEEVD 641
                                                            AQGPKGGSGSGPTIEEVD 258
                                                                                                                                                                                                                                                              Human heat shock protein Hsp71.
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               cancer cell
                                                                                                                                                                                                                                                                                                                                           Homo sapiens
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Binding-site
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Vaccine compositions for vaccinating against cancers and infections, comprises peptide-binding fragments (PBFs) of heat shock proteins (HSPs) and non-covalent complexes of PBFs of HSPs and antigenic molecules.
384 KSENVQDLLLIDVAPLSLGLETAGGVWTALIKRNSTIPTKQTQIFTTYSDNQPGVLIQVY
                                                                                                                                                          564 EADKKKVLDKCQEVISWLDANTLAEKDEPEHKRKELEQVCNPIISGLYQGAGGPGPGFG
                                                                                                          504 TNDKGRLSKEEIERWVQEAEKYKAEDEVQRERVSAKWALESYAFNMKSAVEDEGLKGKIS
                                                                                                                                           181 EADKKKVLDKCQEVISWLDANTLAEKDEFEHKRKELEQVCNPIISGLYQGAGGPGGFG
                                                         EGERAMTKDNNLLGRFELSGIPPAPRGVPQIEVTFDIDANGILNVTATDKSTGKANKITI
                                                                                                                                                                                                                                                                                                                                                                                           Heat shock protein; HSP; HSP peptide-binding fragment; HPBP; vaccine; cytotoxic T call response; hepatitis virus; herpes simplex virus; human immunodeficiency virus; bacteria; Mycobacteria; Rickettsia; protozoa; Leishmani; Trypanosoma; intracellular parasite; Chlamydia; sarcoma; carcinoma; cancer; human; Hsp70 homologue; Hsp71.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           "Central core of peptide binding domain"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      /note= "Peptide binding domain" 396. .502
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      'note= "P-helix motif"
                                                                                                                                                                                                                                                                                                                                                                     Human Hsp70 family homologue, Hsp71.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Location/Qualifiers
                                                                                                                                                                                                                                                                                         AAE12986 standard; protein; 641 AA.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Disclosure; Fig 1C; 39pp; English.
                                                                                                                                                                                                 241 AQGPKGGSGSGPTIEEVD 258
                                                                                                                                                                                                                        624 AÓGPKGGSGSGPTIEEVD 641
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                                                                                                                                                                                                                                                                                                                                           (first entry)
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 /note=
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              (SRIV/) SRIVASTAVA P K.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  WPI; 2001-656559/75.
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Query Match 100.0%; Score 1314; DB 4; Length 641; Best Local Similarity 100.0%; Pred. No. 8.8e-101; Matches 258; Conservative 0; Mismatches 0; Indels 0.

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Gaps

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N-PSDB; ACA89884.

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adenovirus, herpes simplex (HSV) type I and type II, rinderpest
rhinovirus, echovirus, rotavirus, respiratory syncytial virus, mumps
virus, papova virus, papilloma virus, arbovirus, cytomegalovirus,
cohinovirus, huntavirus, coxsackie virus, mesales virus, rubella virus,
cohinovirus, huntavirus, coxsackie virus, mesales virus, rubella virus,
cohinovirus, HIV-II, and HIV-II) bacteria including (including
Mycobacteria, Rickettsia, Mycoplasma, Nelsseria and Legionella); protozoa
(including Leishmani, Kokzidioa and Trypanosoma) and intracellular
parasites (including Chlamydia and Rickettsia). The vaccines may be used
to treat cancers such as human sarcomas and carcinomas, pancreatic
cancer, breast cancer, ovarian cancer, prostate cancer, squamous cell
carcinoma, basal cell carcinoma, appillary carcinoma, papillary
adenocarcinoma, seminoma papillary carcinoma, papillary
adenocarcinoma, seminoma and embryonal carcinoma, bronchogenic
carcinoma, renal cell carcinoma, hepatoma, bile duct carcinoma,
choriocarcinoma, seminoma and embryonal carcinoma. The present sequence
is human Hsp70 family homologue, Hsp71
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Protein differentially expressed in cardiovascular disease #5.
                                                                                                                                                                                                                                                                                                                                                                100.0%; Score 1314; DB 4; Length 641; 100.0%; Pred. No. 8.8e-101;
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                                                                                                                                                                                                                                                                                                                                                                                                   0; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ABU89711 standard; protein; 641 AA
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                                                                                                                                                                                                                                                                                                                                                                                 Best Local Similarity 100.
Matches 258; Conservative
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         WPI; 2003-403108/38.
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                                                                                                                                                                                                                                                                                                                             Sequence 641 AA;
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                                                                                                                                        The invention describes a method of predicting, diagnosing or prognosing a cardiovascular disease by detection of a polymucleotide in a biological sample comprises hybridising at least one of the polymucleotide to a nucleic acid material of a biological sample, thus forming a hybridisation complex, and detecting the hybridisation complex. The polymucleotides, polypeptides, antisense molecule, antibody and reagent are useful for preparing compositions for preventing, predicting or diagnosing, or a medicament for treating a cardiovascular disease, e.g. arteriosclerosis, ischaemia, angina pectoris, or myocardial interction. This sequence represents a procein identified in the invention a being differentially expressed in individuals with cardiovascular disease
                                                                                                                                                                                                                                                                                                                                                                                                                                                                              443
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                           Predicting, diagnosing or prognosing a cardiovascular disease, e.g. angina, ischemia, myocardial infarction or arteriosclerosis by detection of a polynucleotide in a biological sample comprises detecting a
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  EADKKKVLDKCQEVISWLDANTLAEKDEFEHKRKELEQVCNPIISGLYQGAGGPGFG
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                                                                                                                                                                                                                                                                                                                                                                               Length 641;
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100.0%; Pred. No. 8.8e-101;
tive 0; Mismatches 0;
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                                                                                                                Claim 3; Page 260-263; 454pp; English.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ADD47459 standard; protein; 641 AA
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(first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                 Matches 258; Conservative
                                                                                 hybridization complex.
                                                                                                                                                                                                                                                                                                                                                                                  Query Match
Best Local Similarity
                                                                                                                                                                                                                                                                                                                                                 Sequence 641 AA;
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29-JAN-2004
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ADD47459
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heat shock protein-70; HSP70; HSP70.1; HSP70.3; inducible; induction; heat; tumour necrosis factor; TNF; interferon-gamma; tumour.

ADJ27279 standard; protein; 641 AA.

(first entry)

20-MAY-2004

Human HSP70.1

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subjected to pain, a method for identifying a compound which regulates the expression of a polynucleotide sequence which is differentially expression of a polynucleotide sequence which is differentially compound that regulates the activity of one or more of the compound that regulates the activity of one or more of the composition, a method for identifying a compound or small molecule that regulates the activity in an animal of one or more of the polypeptides given in the specification, a method for identifying a compound useful in treating pain and a pharmaceutical composition comprising the one or more of pain and a pharmaceutical composition comprising the one or more or their antibodies. The polymucleotide or the compound that modulates its activity is useful for preparing a medicament for treating pain (e.g. spinal segmental nerve injury (Chung), chronic constriction injury (CCI) and spared nerve injury (SNI)) in an animal (e.g. gene injury (CCI) and spared nerve injury (SNI)) in an animal (e.g. gene injury (but sequence presented is a human protein (described in Table 3 cof the specification) which is differentially expressed during pain.

Note: The sequence data for this patent did not form part of the printed for this injury in injury in the printed or specification.
                                                                                                                                                                                                                                                                                                                                                                                                                                                            or human polynucleotides or a polynucleotide which represents a fragment, derivative or allelic variation of the nucleic acid sequence. Also claimed are a vector comprising the novel polynucleotide, a host cell comprising the vector, a method for identifying a nucleotide sequence which is differentially regulated in an animal subjected to pain and a kit to perform the method, an array, a method for identifying an agent that increases or decreases the expression of the polynucleotide sequence that is differentially expressed in neuronal tissue of a first animal
                                                                                                                                                                                                                                                                                                                                                                                                                                        invention discloses a composition comprising two or more isolated rat
                                                                                                                                                                                                                                                                                                New composition comprising two or more isolated polypeptides, useful for preparing a medicament for treating pain in an animal.
                                                                                                                                                              Costigan M;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ftp.wipo.int/pub/published_pct_sequences.
                                                                                                                                                                                                                                                                                                                                                                                  Example 1; Page; 1017pp; English
                                                                                                                                                                 Befort K,
01-NOV-2001; 2001US-0346382P,
26-NOV-2001; 2001US-0333347P,
                                                                               (GEHO ) GEN HOSPITAL
                                                                                                                                                           Woolf C, D'urso D,
                                                                                                                                                                                                                    WPI; 2003-268312/26
                                                                                                                                                                                                                                             GENBANK; AAA52697
                                                                                                           (FARB ) BAYER AG.
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New pharmaceutical composition comprising HSP70 that is endogenously induced by heat and TNF, useful for the manufacture of a medicament for

treating systemic tumor.

(VLAA-) VLAAMS INTERUNIVERSITAIR INST BIOTECHNOG.

24-JAN-2003; 2003WO-EP000786. 24-JAN-2002; 2002EP-00075297

WO2003061684-A2

Homo sapiens.

Van Molle W,

Libert C, Wielockx B,

WPI; 2003-608168/57. N-PSDB; ADJ27278

> KSENVQDLILLDVAPLSLGLETAGGVMTALIKRNSTIPTKQTQIFTTYSDNQPGVLIQVY EGERAMIKDNNILGRFELSGIPPAPRGVPQIEVIFDIDANGILNVTATDKSTGKANKITI **EGERAMTKONNLIGRPELSGIPPAPRGVPQIEVTPDIDANGILNVTATDKSTGKANKITI** TNDKGRLSKEEIERMVQEAEKYKAEDEVQRERVSAKNALESYAFNMKSAVEDEGLKGKIS TNDKGRLSKEEIERMVQEAEKYKAEDEVQRERVSAKNALESYAFNMKSAVEDEGLKGKIS EADKKKVLDKCQEVI SWLDANTLAEKDEFEHKRKELEQVCNPI I SGLYQGAGGPGGFG KSENVQDLLLLDVAPLSLGLETAGGVMTALIKRNSTIPTKQTQIFTTYSDNQPGVLIQVY Length 641; Indels 100.0%; Score 1314; DB 7; 100.0%; Pred. No. 8.8e-101; ive 0; Mismatches 0; AQGPKGGSGSGPTIEEVD 641 Best Local Similarity 100. Matches 258; Conservative Sequence 641 AA; 384 444 504 564 241 Query Match 61 121 셤 셤 셤 셤 ઠે ठ ò ò ð

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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    623
                                                                                                                                                                                                                                                                                                                                                                                                                                       This sequence represents human heat shock protein-70.1 (HSP70.1). HSP70.1
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                                                                                                                                                                                                                                                                                                                                                                                                                                                   and HSP70.3 are inducible members of the HSP70 family of proteins. The heat shock proteins of the invention are endogenously induced by heat artumour necrosis factor (TMP). This heat shock protein may be used in a composition which further comprises interferon-gamma, and/or a chemotherapeutic compound. The pharmaceutical composition is useful for the manufacture of a medicament for treating systemic tumour.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     384 KSENVQDLLLLDVAPLSLGLETAGGVMTALIKRNSTIPTKQTQIFTTYSDNQPGVLIQVY
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Best Local Similarity
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ADE76981 standard; protein; 641 AA.

ADE76981

624

ADJ27279 RESULT

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The invention relates to a composition comprising several CDNAs that are differentially expressed in a liver disorder. The composition is useful for treating liver disorder such as hyperlipidaemia, hypertension, type for treating liver disorder such as hyperlipidaemia, hypertension, type I diabetes, tumours of the liver and disorders of the inflammatory and immune response. The composition is useful for a high-throughput method cof screening several molecules or compounds to identify a ligand which specifically binds a CDNA. A protein encoded by the CDNA is useful for high-throughput method for using a protein to screen several molecules or compounds to identify at least one ligand which specifically binds the protein which involves combining the protein encoded by the CDNA with compounds to identify at least one ligand which specific compound, therefore identifying a ligand which specific binding between the protein and a molecule or compound, therefore identifying a ligand which specifically binds the protein. The composition is useful for detecting and compound, therefore identifying a ligand which specifically conditions to binds the protein. The composition is useful for detecting and compound, therefore identifying a ligand which specifically conditifying differential gene expression, can be used in gene therapy, to formulate prognosis and to design a treatment regimen and to monitor the efficacy of treatment. The present sequence represents the amino acid in the protein encoded by a CDNA differentially expressed in a
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Composition comprising several cDNAs that are differentially expressed in treated human C3A liver cell cultures, useful for treating liver
                                                                                                                 human; liver disorder; hyperlipidaemia; hypertension; type II diabetes; tumour; liver; inflammatory disorder; immune response disorder; high-throughput screening; differential gene expression; gene therapy.
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100.0%; Pred. No. 8.8e-101;
iive 0; Mismatches 0;
                                                                             Human protein expressed in a liver disorder #42.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Claim 1; SEQ ID NO 146; 41pp; English.
                                                                                                                                                                                                                                                                                                                                     30-JUL-2001; 2001US-00919039
                                                                                                                                                                                                                                                                                                                                                                             28-JUL-2000; 2000US-0222113P
                                       (first entry)
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Best Local Similarity 100.
Matches 258; Conservative
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                                                                                                                                                                                                                                                                                                                                                                                                                       (KASE/) KASER M R.
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                                          29-JAN-2004
                                                                                                                                                                                                                Homo sapiens
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The present invention relates to PRO proteins and their coding sequences. The PRO proteins are useful for diagnosing and treating a B cell related disorder, e.g. X-linked infantile hypogammaglobulinemia, polygaccharide antiquen unresponsiveness, selective IgA deficiency, selective deficiency of IgG subclasses, immunodeficiency with hyper IgM, transient hypogammaglobulinemia of infancy, Burkitt's lymphoma, intermediate lymphoma, follicular lymphoma, type II hypersensitivity, rheumatcid arthritis, autoimmune mediated haemolytic anaemia, myasthenia gravis, hypoadrenocorticism, glomerulonephritis, or anaemia, myasthenia gravis, hypoadrenocorticism, glomerulonephritis, or anaemia, myasthenia gravis, hypoadrenocorticism, glomerulonephritis, or medicament for treating a condition that is responsive to the PRO protein, e.g. cancer or immune-mediated inflammatory diseases. The PRO coding sequences are useful as hybridization probes in chromsome and conting sequences are useful as hybridization probes in chromsome and animals or knockout animals, which in turn are useful in the development animals or knockout animals, which in turn are useful in the development and screening of therapeutically useful reagents.
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         New PRO polypeptide, useful for diagnosing and treating a B cell related disorder, e.g. Burkitt's lymphoma, rheumatoid arthritis, autoimmune mediated hemolytic anemia, myasthenia gravis or ankylosing spondylitis.
                                                                                                                                                                                                                                                                                                                                  Immunosuppressive; Cytostatic; Antiarthritic; Antirheumatic; Antianemic; Antiallergic; Muscular; Neuroprotective; Nephrotropic; Antiinflammatory; Gene Therapy; PRO; B cell related disorder; cancer; immune-mediated inflammatory disease; human.
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100.0%; Pred. No. 8.8e-101;
ive 0; Mismatches 0;
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                                                                                                                                                                                    ADL82939 standard; protein; 641 AA
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                                             258
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                                                                    624 AQGPKGGSGSGPTIEEVD
                                             241 AOGPKGGSGSGPTIEEVD
                                                                                                                                                                                                                                                                                                       Human PRO71095, SEQ ID 141
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Best Local Similarity
Matches 258; Conser
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                                                                                                                                                                                                                                                                  17-JUN-2004
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                                                                                                                                                                                                                             ADL82939;
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The invention relates to human tumour-associated antigenic target (TAT) polypeptides, and their related nucleic acids. The TAT polypeptides are overexpressed in cancer tissues compared to normal tissues, and may thus serve as effective targets for the diagnosis and treatment of cancer in mammals. The invention also relates to nucleic acid and polypeptide sequences at least 80% identical to the TAT nucleic acids and polypeptides; expression vectors and host cells comprising a TAT nucleic acid; an antibody specific for a TAT polypeptide; a peptide or organic molecule which binds to a TAT polypeptide; fusion proteins comprising a TAT polypeptide; and methods and compositions for the treatment or diagnosis of cancer in mammals. TAT polypeptides, nucleic acids, and methodies, and compositions are useful for diagnosing or treating an electric acids, antagonists, binding molecules and compositions are useful for diagnosing or treating a cell proliferative disorder associated with increased TAT expression, particularly cancers such as breast cancer,
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                                                                                                                                                                                                 EADKKKVLDKCQEVISWLDANTLAEKDEFEHKRKELEQVCNPIISGLYQGAGGPGGGGG 623
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Tumour-associated antigenic target (TAT) polypeptide PRO71095, SEQ:1964.
                                                                                                          TNDKGRLSKBEIERMVQEAEKYKAEDEVQRERVSAKNALESYAFNMKSAVEDEGLKGKIS
                                                                                                                                                          EADKKKVLDKCQEVISWLDANTLAEKDEFEHKRKELEQVCNPIISGLYQGAGGPGPGGFG
EGERAMTKONNLLGRFELSGIPPAPRGVPQIEVTFDIDANGILNVTATDKSTGKANKITI
                        BGERAMTKDNNLLGRPELSGIPPAPRGVPQIEVTPDIDANGILLNVTATDKSTGKANKITI
                                                                              TNDKGRLSKEEIERMVQEAEKYKAEDEVQRERVSAKNALESYAFNMKSAVEDEGLKGKIS
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Tumour-associated antigenic target; TAT; human; overexpression; catumour; diagnosis; cell proliferative disorder; breast cancer; colorectal cancer; lung cancer; ovarian cancer; liver cancer; central nervous system cancer; bladder cancer; pancreatic cancer; cervical cancer; melanoma; leukaemia; hybridisation probe; chromosome identification; chromosome mapping; gene mapping;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                         (first entry)
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            gene therapy; cytostatic
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Novel peptide derived from inducible heat shock protein Hsp70, useful for inducing cytotoxic I lymphocyte response that targets cells expressing inducible Hsp70, and for preparing drugs for treating cancer.
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colorectal cancer, lung cancer, ovarian cancer, liver cancer, bladder cancer, pancreatic cancer, cervical cancer, cancers of the central nervous system, melanoma and leukaemia. TAT nucleic acids may further used as hybridisation probes, in chromosome and gene mapping, in chromosome identification and in gene therapy. The present sequence represents a TAT polypeptide of the invention
                                                                                                                                                                                                                    384 KSENVQDLLLLDVAPLSLGLETAGGVMTALIKRNSTIPTKQTQIFTTYSDNQPGVLIQVY
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                                                                                                                                                                                                                                                                                                                                      504 TNDKGRLSKEEIERWVQEAEKYKAEDEVQRERVSAROVALESYAFNMKSAVEDEGLKGKIS
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                                                                                                                                                                                                                                                                              EGERAMTKONNLLGRFELSGIPPAPRGVPQIEVTFDIDANGILNVTATDKSTGKANKITI
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     inducible heat shock protein; Hsp70; constitutive heat shock protein;
Hsc70; human leukocyte antigen; HLA.
                                                                                                                                                                   Gaps
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  The present invention relates to a peptide comprising a sequence least 8 contiguous amino acids, having at least 65 % identity to
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                                                                                                                                     Length 641;
                                                                                                                                                                   Indels
                                                                                                                                   ch 100.0%; Score 1314; DB 8; al Similarity 100.0%; Pred. No. 8.8e-101; 258; Conservative 0; Mismatches 0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Disclosure; SEQ ID NO 1; 49pp; English
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     MOLECULES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ADI20102 standard; protein; 641 AA.
                                                                                                                                                                                                                                                                                                                                                                                                                                           258
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                                                                                                                                                                                                                                                                                                                                                                                                                                                            624 AQGPKGGSGSGPTIEEVD
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                                                                                                                                                                                                                                                                                                                                                                                                                                           241 AQGPKGGSGSGPTIEEVD
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Kosmatopoulos K;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            (first entry)
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                                                                                                                                   Query Match
Best Local Similarity
Matches 258; Conserv
                                                                                                         Sequence 641 AA;
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                                                                                                                                                                                                                                             503
         sequence of constitutive heat shock protein Hsc70 by at least one amino acid, and capable of inducing cytotoxic T lymphocytes that specifically recognize cells naturally producing inducible Hsp70, in vitro or in vivo. The peptides are stable, and has high affinity for human leukocyte antigen (HLA) class I molecules. The present sequence represents Hsp 70.
                                                                                                                                                                                            443
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inducible heat shock protein (Hsp)-70 sequence, differing from
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in gene
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                                                                                                                                                                    KSENVQDLLLLDVAPLSLGLETAGGVMTALIKRNSTIPTKQTQIFTTYSDNQPGVLIQVY
                                                                                                                                                                                 Gaps
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Ishii
                                                                                                                                          ;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      The invention relates to a novel human polynucleotide and the polypeptide. A polynucleotide of the invention may have a use
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Otsuki T, Wakamatsu A, Sato H, Isl
Hio Y, Otsuka K, Nagai K, Irie R,
Otsuka M, Nagahari K, Masuho Y;
                                                                                                             human; gene therapy; diagnostic marker; pharmaceutical
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Human protein of the invention SEQ ID NO:3466
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                                                                                                                                                                                                                                                                                                                                                                            AQGPKGGSGSGPTIEEVD 258
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                                                                                                                              Best Local Similarity 99.6
Matches 257; Conservative
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     J, Isono Y,
Yoshikawa T,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          WPI; 2003-723558/69.
N-PSDB; ADM02338.
                                                                                          Sequence 641 AA;
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Seki N, Yosh
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                                                                                                                 Query Match
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therapy. An oligomucleotide of the invention ADM06202-ADM06773 is useful as a primer for synthesizing the polymucleotide or as a probe for detecting the polymucleotide. The polymucleotides ADM01316-ADM03758 are useful in gene therapy, for developing a diagnostic marker or medicines for regulating their expression and activity, or as a target of gene therapy. The proteins ADM03759-ADM06201 encoded by the polymucleotides are useful as pharmaceutical agents. The present sequence represents a
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   The invention relates to a novel heat shock protein fragment (HSP) that
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                heat shock protein; HSP; cytokine; CC chemokine; nitric oxide; cancer; antimicrobial; virucide; cytostatic; microbial infection; anti-HIV; viral infection; immune system disorder; vaccine; HSP70; human.
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cell.
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                                                                                                                                                                          Score 1309; DB 7;
Pred. No. 1.6e-100;
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                                                                                                            protein sequence of the invention.
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Best Local Similarity 99.6
Matches 257; Conservative
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                                                                                                                                              Sequence 476 AA;
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can increase the level of one or more cytokines and/or one or more CC chemokines and/or nitric oxide produced by a cell, above that caused by the corresponding full length heat shock protein. The protein fragment of the invention has antimicrobial, virucide, and cytostatic activity. The protein fragment is useful in therapy, in treatment or prophylaxis of a disease and in the manufacture of a medicament for treatment or prophylaxis of a disease such as microbial infection, viral infection, disease of the immune system or cancer. The fragment is also useful as an adjuvant in vaccines, preferably, anti-HIV vaccines. The present sequence represents the human HSP70 protein
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                                                                                                                                                                                                            Length 641;
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                                                                                                                                                                                                          Score 1309; DB 6;
Pred. No. 2.3e-100;
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                                                                                                                                                                                                          99.64;
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Matches 257; Conservative
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N-PSDB; ADF76348.
                                                                                                                                                                             Sequence 641 AA;
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and transmembrane proteins. Extracellular proteins play important roles in the formation, differentiation and maintenance of multicellular coganisms. The fate of many individual cells (for example proliferation, migration or differentiation) is typically governed by information received from other cells and the immediate environment. The information received from other cells and the immediate environment. The information is often transmitted by secreted polypeptides (for example mitogenic factors, survival factors, cytotoxic factors, differentiation factors, neuropeptides and hormones) which are received and interpreted by diverse cell receptors or membrane bound proteins. These membrane bound proteins and receptors may be of use as pharmaceutical and diagnostic agents, such as in the blocking of receptor-ligand interactions. The current invention provides the amino acid sequences of novel human membrane bound receptors or disperceins, along with the cDNA sequences encoding them. The novel proteins of the invention may have cytostactic activities through the stimulation of chondrocytes. The nucleic acids of the invention may be tumour in a mammal. In addition, they may be useful for measuring or detecting the expression of a tumour associated gene. The present
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   121 TNDKGRLSKEBIERMVQBAEKYKAEDEVQRERVSAKNALESYAFNMKSAVEDEGLKGKIS 180
                                                                                                                      This invention relates to novel nucleic acids encoding human PRO secreted
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                9
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              384 KSENVQDLLLLDVAPLSLGLETAGGVMTALIKRNSTIPTKQTQIFTTYSDNQPGVLIQVY
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disorder, e.g. systemic lupus erythematosus, rheumatoid is, osteoarthritis, juvenile chronic arthritis, thyroiditis
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Tumour-associated antigenic target; TAT; human; overexpression; ct tumour; diagnosis; cell proliferative disorder; breast cancer; colorectal cancer; lung cancer; ovarian cancer; liver cancer; central nervous system cancer; bladder cancer; pancreatic cancer; cervical cancer; melanoma; leukaemia; hybridisation probe; chromosome identification; chromosome mapping; gene mapping;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Length 641;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             tch 99.6%; Score 1309; DB 7; al Similarity 99.6%; Pred. No. 2.3e-100; 257; Conservative 1; Mismatches 0;
                                                                              Claim 10; SEQ ID NO 22; 918pp; English
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ABM80759 standard; protein; 641 AA.
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  gene therapy; cytostatic.
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Best Local Similarity
                                      diabetes mellitus.
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     invention.
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Matches
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AAY88410 standard; protein; 554 AA
AAY88410
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                                                                                                                                                                                                                                                                                             The invention relates to human tumour-associated antigenic target (TAT) polypeptides, and their related nucleic acids. The TAT polypeptides are overexpressed in cancer tissues compared to normal tissues, and may thus serve as effective targets for the diagnosis and treatment of cancer in mammals. The invention also relates to nucleic acid and polypeptide equences at least 80% identical to the TAT nucleic acids and polypeptide equences at least 80% identical to the TAT nucleic acids and polypeptide equences at least 80% identical to the TAT nucleic acids and nethods specific for a TAT polypeptide; a peptide or organic molecule which binds to a TAT polypeptide; fusion proteins comprising a TAT nucleic acids, antibodies, antagonists, binding molecules and compositions for the treatment or diagnosing or treating a cell proliferative disorder associated with articularly cancers such as breast cancer, colorectal cancer, lung cancer, call proliferation ab breast cancer, colorectal cancer, ung cancer, cancers so the central cancer, ung cancer, cancers so the central unserdiated as hybridisation probes, in chromosome and gene mapping, in used as hybridisation and in gene therapy. The present sequence
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                                                                                                                                                                                                                and nucleic acids,
                                                                                                                                                                                                             New tumor-associated antigenic target polypeptides and nucleic aci
useful in preparing a medicament for treating or detecting a
proliferative disorder, e.g. breast, lung, colorectal, ovarian or
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99.6%; Score 1309; DB 8; Length 641;
Best Local Similarity 99.6%; Pred. No. 2.38-100;
Matches 257; Conservative 1; Mismatches 0; Indels 0
                                                                                                                                                                                                                                                                             Claim 12; SEQ ID NO 1962; 7273pp; English
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                                                                            29-SEP-2003; 2003WO-US028547.
                                                                                                    02-OCT-2002; 2002US-0414971P.
                                                                                                                                                     Zhou Y;
                                                                                                                                                                                                                                                      prostate cancer or tumor.
                                                                                                                             (GETH ) GENENTECH INC
                                                                                                                                                                              2004-347921/32.
                                                                                                                                                      Zhang Z,
                                                                                                                                                                                        N-PSDB; ACN38446
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Sequence 641 AA;
                             WO2004030615-A2
     Homo sapiens
                                                    15-APR-2004
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   7;
                                                                                                                       Human; heat shock protein; HSP70; chromosome 6p21.3-22; stress; chromosome 14q22-24; transcription; rheumatism; schizophrenia; depression; nephrotic syndrome; SHSP70.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Query Match 98.8%; Score 1298.5; DB 3; Length 554; Best Local Similarity 99.6%; Pred. No. 1.4e-99; Matches 257; Conservative 0; Mismatches 0; Indels 1;
                                                                                   Human heat shock protein SHSP70 amino acid sequence.
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                                                                                                                                                                                                                                                                                                                                                                                                                                                            (HOKE-) HOKEN KAGAKU KENKYUSHO
                                                                                                                                                                                                                                                                                                                                                                       99JP-00257146.
                                                                                                                                                                                                                                                                                                                                                                                                                95JP-00158581.
                                         (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           WPI; 2000-264458/23.
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                                                                                                                                                                                                                                                                            JP200006999-A.
                                                                                                                                                                                                                                Homo sapiens.
                                                                                                                                                                                                                                                                                                                                                                       01-JUN-1995;
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                                         31-JUL-2000
                                                                                                                                                                                                                                                                                                                        07-MAR-2000.
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AAY88410;
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AAY88409
ID AAY88
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AC AAY88
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Query Match
Best Local Similarity 99.6
Matches 257; Conservative
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Sequence 640 AA;
                                                                                                                                                       19-FEB-1999;
                                                                 Homo sapiens
                                                                                                             24-AUG-2000
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                                                  Human; heat shock protein; HSP70; chromosome 6p21.3-22; stress; chromosome 14q22-24; transcription; rheumatism; schizophrenia; depression; nephrotic syndrome; SHSP70.
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0; Mismatches 0; Indels
                               Human heat shock protein SHSP70 amino acid sequence.
                                                                                                                                                                                                                                                                                                                                                                                                                                   query match 98.8%; Score 1298.5;
Best Local Similarity 99.6%; Pred. No. 1.4e-
Matches 257; Conservative 0; Mismatches
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                                                                                                                                                                                                              (HOKE-) HOKEN KAGAKU KENKYUSHO
                                                                                                                                                                                                                                                                                                      Example, Fig 2, 11pp, Japanese
                                                                                                                                                                                        95JP-00158581
                                                                                                                                                                    99JP-00257146
           (first entry)
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                                                                                                                                                                                                                                    WPI; 2000-264458/23
                                                                                                                                                                                                                                                                                                                                                                                                                    Sequence 554 AA;
                                                                                                                                                                                                                                                N-PSDB; AAA15621
                                                                                                                      JP2000069999-A.
                                                                                                 Homo sapiens
                                                                                                                                                                   01-JUN-1995;
                                                                                                                                                                                        01-JUN-1995;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           05-JAN-2001
          31-JUL-2000
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peptide containing a CTL (cytocair T lymphocyte) epitope recognised by cytocoxic T cells and a protein containing the ATPase domain of a heat shock protein. Also described are: (1) a drug composition containing (1) as active ingredient; (2) a DNA encoding (1); (3) an expression vector containing the DNA of (2); and (4) a transformant which can retain the expression vector of (3); (1) has cytostatic, immunostimulant and protozoacide activities, and can be used as a cellular immune response inducer. The protein is useful as an active ingredient for drug malaria or cancer e.g. to provide systemic immunity against leukaemia. The present sequence represents a specifically claimed heat shock protein
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 121 TNDKGRLSKEEIERMVQEAEKYKAEDEVQRERVSAKNALESYAFNMKSAVEDEGLKGKIS 180
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Pused protein capable of inducing cellular immune response, useful as active ingredient for drug compositions in preventing and/or treating infectious diseases such as malaria or cancer.
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        The present invention describes a fused protein (I) prepared from a
ATPase; Hsp70; heat shock protein; cytotoxic T lymphocyte; CTL; immune response; infectious disease; malaria; cytotoxic T cell; cytostatic; immunostimulant; cellular immune response inducer;
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                                                                                                                     protozoacide; leukaemia; cancer
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The present invention describes a predictor set comprising a plurality of polymucleotides or polypeptides whose expression pattern is predictive of the response of cells to treatment with a compound that modulates protein tyrosine kinase activity or members of the protein tyrosine kinase activity or members of the protein tyrosine kinaselection and the activity of cells, comprising obtaining a sample of cells, coteralining whether the cells express a plurality of markers, and correlating the expression of the markers to the compound's ability to modulate the activity of the cells; (2) a plurality of cell lines for identifying polymucleotides and polypeptides whose expression levels correlate with compound sensitivity or resistance of cells associated with a disease state, comprising subjecting the plurality of a slociated with a disease state, comprising subjecting the plurality of a microarray of polymucleotides or polypeptides, and selecting cell lines to one or more compounds, analysing the expression pattern of a microarray of polymucleotides for polypeptides that predict the sensitivity or resistance of cells associated with a disease state by using the expression pattern of the microarray. The polymucleotides and construction and the microarray. The polymucleotides and construction are alsease state by using the expression pattern of the microarray. The polymucleotides and convention are not an event and a sease that a predict the sensitivity or resistance of cells associated with a disease state by using the expression pattern of the microarray. The polymucleotides and polymucleotides and convention are not an event and a penetherapy.
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                                                                                                                                           predictor set; protein tyrosine kinase activity modulator;
protein tyrosine kinase pathway; protein tyrosine kinase; cytostatic;
gene therapy; drug sensitivity; genetic profile; cancer; human.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           New polynucleotides and polypeptides for predicting the activity of compounds that interact with protein tyrosine kinases and/or protein tyrosine kinase pathways.
                                                                                              Human src biomarker polypeptide SEQ ID NO:326.
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                                            (first entry)
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                                            01-JAN-2004
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ADD14137;
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Shaw P;

Lee FY,

1; 9 1 KSENVQDILLLEDVAPLSLGLETAGGVMTALIKRNSTIPTKQTQIFTTYSDNQPGVLIQVY Gaps . H 98.8%; Score 1298.5; DB 7; Length 640; 99.6%; Pred. No. 1.7e-99; ive 0; Mismatches 0; Indels', 1; Best Local Similarity 99.6 Matches 257; Conservative Query Match

BGERAMTKONNLLGRPELSGIPPAPRGVPQIEVTFDIDANGILNVTATDKSTGRANKITI 120 61

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This invention relates to novel mitochondrial targets that can be used for therapeutic intervention in treating a disease associated with altered mitochondrial function. Specifically, it refers to a method for identifying proteins of the human titochondrial proteome that are useful for drug screening assays, as well as therapeutic targets. The present invention describes a method for identifying such proteins that can be used in the treatment of various diseases associated with altered mitochondrial function including diabetes mellitus, Huntington's disease, osteoarthritis, Leber's hereditary optic neuropathy (LHON), mitochondrial encephalopathy lactic acidosis and stroke (MELAS), mycolonic epilepsy ragged red fibre syndrome (MERRF) or cancer. Accordingly, these compositions have neuroprotective, nootropic, antidiabetic, antiathritic, osteopathic, ophthalmological and Identifying a mitochondrial target for drug screening assays and for treating diseases associated with altered mitochondrial function, comprises detecting a modified polypeptide in a sample and correlating Claim 1; SEQ ID NO 255; 180pp; English. WPI; 2003-845369/78. with the disease. Warnock DE;

240 444 EGERAMTKDNNLLGRFELSGIPPAP-GVPQIEVTFDIDANGILNVTATDKSTGKANKITI 502 mitochondrial; human; screening assay; diabetes mellitus; Huntington's disease; osteoarthritis; Leber's hereditary optic neuropathy; LHON; mitochondrial encephalogathy lactic acidosis and stroke; MELAS; myoclonic epilepsy ragged red fibre syndrome; MERRF; cancer; neuroprotective; nootropic; antidiabetic; anticonvulsant; antiarthritic; osteopathic; ophthalmological; cytostatic. TNDKGRLSKEBI BRWYQEAEKYKAEDEVQRERVSAKNALESYAFNWKSAVEDEGLKGKIS EADKKKVLDKCQBVISWLDANTLAEKDEFEHKRKELEQVCNPIISGLYQGAGGPGGFG Human heat mitochondrial protein as a therapeutic target SeqID255. ADJ68449 standard; protein; 640 AA 241 AGGPKGGSGSGPTIEEVD 258 623 AQGPKGGSGSGPTIEEVD 640 (first entry) WO2003087768-A2. Homo sapiens. 06-MAY-2004 121 ADJ68449; 181 ADJ68449 g ò 셤 8 셤 ò

23-OCT-2003

04-APR-2003; 2003WO-US010870

12-APR-2002; 2002US-0372843P.

17-JUN-2002; 2002US-0389987P. 20-SEP-2002; 2002US-0412418P.

(MITO-) MITOKOR. (BUCK-) BUCK INST AGE RES.

Glenn GM; Gibson BW, Taylor SW, Fahy ED, Zhang B, Ghosh SS,

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Sequence 640 AA;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             heat shock protein; HSP; cytokine; CC chemokine; nitric oxide; cancer; antimicrobial; virucide; cytostatic; microbial infection; anti-HIV; viral infection; immune system disorder; vaccine; HSP70; bovine.
                                                                                                                                                                                                         KSENVQDLLLLDVAPLSLGLETAGGVMTALIKRNSTIPTKGTQIFTTYSDNQPGVLIQVY
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cytostatic activities. This polypeptide sequence is a human heart mitochondrial protein of the invention.
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                                                                                                         640;
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Pred. No. 1.7e-99;
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                                                                                                       98.8%;
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                                                                                                                          Similarity
                                                                Sequence 640 AA;
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Matches 257;
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prophylaxis of a disease such as microbial infection, viral infection, disease of the immune system or cancer. The fragment is also useful as an adjuvant in vaccines, preferably, anti-HIV vaccines. The present sequence represents the bovine HSP70 procein
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intracellular; abnormal transcription; acute; chronic; sustained; stress.
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             564 EADKKKVLDKCQEVISWLDANTLAEKDEFEHKRKELEQVCNPIISRLYQGAGGGGGGG
                                                                                                                                                                                                                                                                                                                                                                            384 KSENVQDLLLLDVAPLSLGLETAGGVMTALIKRNSTIPTKQTQIFTTYSDNQPGVLIQVY
                                                                                                                                                                                                                                                                                                                                                                                                                                                               EGERAMTKDNNLLGRFELSGIPPAPRGVPQIEVTFDIDANGILNVTATDKSTGKANKITI
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              444 EGERAMTRDNNLLGRPELSGIPPAPRGVPQIEVTFDIDANGILNVTATDKSTGKANKITI
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    121 TNDKGRLSKEBIERMVQEAEKYKAEDEVQRERVSAKNALESYAFNMKSAVEDEGLKGKIS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            181 BADKKKVLDKCQEVISWLDANTLAEKDEFEHKRKELEQVCNPIISGLYQGAGGPGGGFG
                                                                                                                                                                                                                                                                                                                                         1 KSENVQDLLLLDVAPLSLGLETAGGVMTALIKRNSTIPTKQTQIFTTYSDNQPGVLIQVY
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                                                                                                                                                                                                                    Length 641;
                                                                                                                                                                                                                                                                             Indels
                                                                                                                                                                                                                                                                             7
                                                                                                                                                                                                                 Match 98.6%; Score 1295; DB 6; Local Similarity 98.8%; Pred. No. 3.4e-99; e8 255; Conservative 1; Mismatches 2;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Æ
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   AAW10065 standard; protein; 640
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  241 AQGPKGGSGSGPTIEEVD 258
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Claim 1; Fig 1; 13pp; Japanese.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        95JP-00158581
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Human heat shock protein 70
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1997-081088/08.
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                                                                                                                                                           Sequence 641 AA;
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KSENVODLLLLDVAPLSLGLETAGGVMTALIKRNSTIPTKQTQIFTTYSDNQPGVLIQVY

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1;
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                                                                                   443
                                                                                                           EGERAMTKDNNLLGRFELSGIPPAPRGVPQIEVTFDIDANGILNVTATDKSTGKANKITI 120
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              This sequence represents the human heat shock protein HSP70 amino acid sequence. Human heat shock proteins are located on chromosomes 6p21.3-22 and 14q22-34. The invention relates to the abnormal transcription of intracellular HSP70mRNA under acute and chronic stress load in a human. The abnormal transcription of HSP70 can be used in the improvement of stress and response and diagnosis of stress diseases including rheumatisms, schizophrenia, depression and nephrotic syndrome
                                                                                                                                                                                                                      RADKKKVLDKCOEVISWLDANTLAEKDEFEHKRKELEQVCNPIISGLYQGAGGPGPGFG
                                                                                                                                                                                                                                             EADKKKVI,DKCQEVISWI,DANTI,AEKDEFEHKRKELEQVCNPIISGLYQCAGGPGPGGFG
                                                                       TNDKGRLSKEEIERMVQEAEKYKAEDEVQRERVSAKNALESYAFNMKSAVEDEGLKGKIS
                                                                                                                                                                                   KSENVQDLLLLDVAPLSLGLETAGGVMTALIKRNSTIPTKQTQIFTTYSDNQPGVLIQVY
                                                                                                                            Gaps
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Human; heat shock protein; HSP70; chromosome 6p21.3-22; stress;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             chromosome 14922-24; transcription; rheumatism; schizophrenia; depression; nephrotic syndrome.
 Length 640;
                            1; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                         Human heat shock protein HSP70 amino acid sequence.
  DB 2;
 Score 1290.5; Di
Pred. No. 8e-99;
                            0; Mismatches
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                                                                                                                                                                                                                                                                                                                                                                           AAY88408 standard; protein; 640
                                                                                                                                                                                                                                                                                              AQGPKGGSGSGPTIEEVD 640
                                                                                                                                                                                                                                                                             AQGPKGGSGSGPTIEEVD 258
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Claim 2; Fig 1; 11pp; Japanese.
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     95JP-00158581.
Query Match
Best Local Similarity 99.2%;
Matches 256; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                               (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          2000-264458/23.
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Sequence 640 AA;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           01-JUN-1995;
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                                                                                                                                                                                                                                                                                                                                                                                                     AAY88408;
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Gaps

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1; Indels

98.2%; Score 1290.5; DB ilarity 99.2%; Pred. No. 8e-99; Conservative 0; Mismatches

Similarity

Best Local Sim. Matches 256; Query Match Best Local S:

DB 3; Length 640;

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According to the legend of Fig 2, the H. sapiens HSP sequence has 641 amino acid residues, the sequence itself has only 640, including "O" (?) at position 640. Fig. 2 provides an alignment of heat shock proteins from a variety of organisms: 1. M. Myopneumoniae (Mnyhsp70 - AAR03922); 2. Bacillus megaterium (Bmehsp70 - AAR03923); 3. E. coli (dnaK - AAR03924); 4. T. cruzi (tc70kd - AAR03925); 5. T. cruzi (AAR03926); 6. Rat rattus (rathsp70 - AAR03929); 7. Xenopus laevis (X170 - AAR03928); 8. Homo sapiens (humhsp70 - AAR03929); 9. Gallus gallus (chkhsp70 - AAR03930); 10. Zea mays (machsp70 - AAR03931); 11. Serratia marcescens (smahsp70 - AAR03932). The proteins having homology to hsp's of T. cruzi can be used in vaccines and diagnosis involving e.g. Trypanosoma, Mycoplasma and
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Proteins homologous to heat shock proteins of Trypanosoma cruzi - used in vaccines and diagnosis for species of e.g. muco-plasma or mycobacteria.
                                                                       502
                                                                                                      180
                                                                                                                                     562
                                                                                                                                                                                       443
384 KSENVQDLLLLDVAPLSLGLETAGGVMTALIKRNSTIPTKQTQIFTTYSDNQPGVLIQVY
                                                                  444 EGERAMTKONNLLGRFELSGIPPAP-GVPQIEVTFDIDANGILNVTATDKSTGKANKITI
                                                                                                      121 TNDKGRLSKEBIERMVQEAEKYKAEDEVQRERVSAKNALESYAFNMKSAVEDEGLKGKIS
                                         EGERANTKONNLLGRFELSGIPPAPRGVPQIEVTFDIDANGILAVTATDKSTGKANKITI
                                                                                                                                    503 TNDKGRLSKERIERMVQEAEKIKAEDEVQRERVSAKNALESYAFNWKSAVEDEGLKGKIS
                                                                                                                                                                     EADKKKVLDKCQEVISWLDANTLAEKDEFEHKRKELEQVCNPIISGLYQGAGGPGGFG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     /note= "residue given as "O" in specification"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Hsp70; heat shock protein; Trypanosoma cruzi; vaccines; HSP
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Misc-difference 640
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                                                                                                                                                                                                                                                                                                                                               AAR03929 standard; protein; 640
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                                                                                                                                                                                                                                  241 AQGPKGGSGSGPTIEEVD 258
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               88US-00243474
                                                                                                                                                                                                                                                                                                                                                                                                                                         Homo sapiens HSP (humhsp70)
                                                                                                                                                                                                                                                                                                                                                                                                             30-AUG-1990 (first entry)
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 12-SEP-1988;
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                                            61
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Dragon
                                                                                                                                                                                                                                                                                                                  RESULT 24
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                                                                                                                                                  502
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                                                                                                                                                                                                                                                                      621
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              This sequence represents the human heat shock protein LHSP70 amino acid agequence. Human heat shock proteins are located on chromosomes 6p21.3-22 and 14922-24. The invention relates to the abnormal transcription of intracellular HSP70mRNA under acute and chronic stress load in a human. The abnormal transcription of HSP70 can be used in the improvement of stress and response and diagnosis of stress diseases including rheumatisms, schizophrenia, depression and nephrotic syndrome
                                                                                                                                    EGERAMTKDNNLLGRFELSGIPPAP-GVPQIEVTFDIDANGILNVTATDKSTGKANKITI
                                                                                                                                                                                                                                                           EADKKKVLDKCQEVISWLDANTLAEKDEFEHKRKELEQVCNPIISGLYQGA-GPGPGFG
                                                                                     KSENVQDLLLLDVAPLSLGLETAGGVMTALIKRNSTIPTKQTQIFTTYSDNQPGVLIQVY
                                                                                                                                                                                TNDKGRLSKEEIERMVQEAEKYKAEDEVQRERVSAKNALESYAFNMKSAVEDEGLKGKIS
                                                                                                                                                                                                TNDKGRLSKEBIERMVQEAEKYKAEDEVQRERVSAKNALESYAFNMKSAVEDEGLKGKIS
                                                                                                                                                                                                                                        EADKKKVLDKCQEVISWLDANTLAEKDEFEHKRKELEQVCNPIISGLYQGAGGPGGFG
                                                                                                                   EGERAMIKDNNLLGRFELSGIPPAPRGVPQIEVTFDIDANGILNVTATDKSTGKANKITI
                                                           KSENVQDLLLLDVAPLSLGLETAGGVMTALIKRNSTIPTKQTQIFTTYSDNQPGVLIQVY
                             Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  stress;
                             5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Human; heat shock protein; HSP70; chromosome 6p21.3-22; stress;
chromosome 14q22-24; transcription; rheumatism; schizophrenia;
depression; nephrotic syndrome; LHSP70.
 Length 640;
                             Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Human heat shock protein LHSP70 amino acid sequence.
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Score 1282; DB 2;
Pred. No. 4.1e-98;
0; Mismatches 0;
                                                                                                                                                                                                                                                                                                                                                                                                           AAY88411 standard; protein; 640 AA.
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           (HOKE-) HOKEN KAGAKU KENKYUSHO KK
                                                                                                                                                                                                                                                                                                                   AQGPKGGSGSGPTIEEVD 639
                                                                                                                                                                                                                                                                                                    241 AQGPKGGSGSGPTIEEVD 258
97.6%;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                      (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Abnormal transcription of continuous load of stress
Query Match
Best Local Similarity 99.2
Matches 256; 'Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       WPI; 2000-264458/23.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Sequence 640 AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    JP2000069999-A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Homo sapiens
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 01-JUN-1995;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               01-JUN-1995;
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                                                                                     384
                                                                                                                   61
                                                                                                                                                  444
                                                                                                                                                                                                                                        181
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                                                                                                                                                                             121
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AAY88411
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Gaps

1;

2; Indels

640;

DB 3;

Score 1278.5; DE Pred. No. 8e-98; 2; Mismatches

97.3**%**; 98.1**%**;

Query Match Best Local Similarity 98.1 Matches 253; Conservative

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The invention relates to a novel heat shock protein fragment (HSP) that can increase the level of one or more cytokines and/or one or more CC chemokines and/or nitric oxide produced by a cell, above that caused by the corresponding full length heat shock protein. The protein fragment of the invention has antimicrobial, virucide, and cytostatic activity. The protein fragment is usefull in therapy, in treatment or prophylaxis of a disease and in the manufacture of a medicament for treatment or prophylaxis of the immune system or cancer. The fragment is also useful as an adjuvant in vaccines, preferably, anti-HIV vaccines. The present sequence represents the rat HSP70 protein
                                                             120
                                                                                                                             180
                                                                                                                                                            562
                                                                                                                                                                                            240
                                                                                                                                                                                                                         622
                            443
                                                                                           502
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         heat shock protein; HSP; cytokine; CC chemokine; nitric oxide; cancer; antimicrobial; virucide; cytostatic; microbial infection; anti-HIV; viral infection; immune system disorder; vaccine; HSP70; rat.
                                                                                                                            TNDKGRLSKEEIERMVQEAEKYKAEDEVQRERVSAKNALESYAFNMKSAVEDEGLKGKIS
                                                                                                                                                                                                           563 BADKKKVLDKCQEVISWLDANTLAEKDEFEHKRKELEQVCNPIISGLYQGAGGPGFG
                                                                              503 TNDKGRLSKEEIERNVQEAEKYKAEDEVQRERVSAENALESYAFNMKSAVEDEGLKGKIS
                                                                                                                                                                                            EADKKKVLDKCQEVI SWLDANTLAEKDEFEHKRKELEQVCNPI I SGLYQGAGGPGGFG
                  384 KSENVQDLLLLDVAPLSLGLETAGGVMTALIKRNSTIPTKQTQIFTTYSDNQPGVLIQVY
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Novel heat shock protein fragment useful for treating microbial infection, viral infection or cancer, that can increase the level of cytokines and/or CC chemokines and/or nitric oxide produced by a cell
1 KSENVQDLLLLDVAPLSLGLETAGGVMTALIKRNSTIPTKQTQIFTTYSDNQPGVLIQVY
                                                             EGERAMTKDNNLLGRFELSGIPPAPRGVPQIEVTFDIDANGILNVTATDKSTGKANKITI
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Score 1258; DB 6; Length 641; Pred. No. 4.1e-96;
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                                                                                                                                                                                                                                                                                                                                                                         ABR40398 standard; protein; 641 AA.
                                                                                                                                                                                                                                                           241 AQGPKGGSGSGPTIEEVD 258
                                                                                                                                                                                                                                                                                          623 AQGPKGGSGSGPTIREVD 640
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Singh M,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      95.7%;
95.3%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         03-OCT-2001; 2001GB-00023756.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         03-OCT-2002; 2002WO-GB004475
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       UNICO ) KINGS COLLEGE LONDON
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Lehner T, Kelly CG,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      WPI; 2003-430189/40.
                                                                                                                                                                                                                                                                                                                                                                                                                                          (first
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Best Local Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Rat HSp70 protein.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          WO2003029289-A2.
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        10-APR-2003.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Rattus sp.
                                                                                                                            121
                                                             61
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                                                                                                        120
                                                                                                                                                                                                                                                    240
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(FARB ) BAYER AG.
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The invention discloses a composition comprising two or more isolated rate or human polymucleotides or a polymucleotide which represents a fragment, or human polymucleotides or a polymucleotide acid sequence. Also claimed are a vector comprising the novel polymucleotide, a host cell comprising the vector, a method for identifying a nucleotide sequence which is differentially regulated in an animal subjected to pain and a kit to perform the method, an array, a method for identifying an agent that increases or decreases the expression of the polymucleotide sequence that is differentially expressed in neuronal tissue of a first animal subjected to pain, a method for identifying a compound which regulates the expression of expression of a polymucleotide sequence which is differentially expressed in an animal subjected to pain, a method for identifying a compound that regulates the activity of one or more of the compound that regulates the activity of one or more of the compound to a method for identifying a compound useful in treating activity in an animal of one or more of the polypeptides given in the contraction of a pecification, a method for identifying a compound useful in treating activity in an animal of one or more of the polypeptides given in the contraction of a pecification, a method for identifying a compound useful in treating activity in an animal of one or more of the polypeptides given in the contraction of the polyment of the polypeptides of the polyment of the polyment of the polyment of the polyment of the polyment of the polyment of the polyment of the polyment of the polyment of the polyment of the polyment of the polyment of the polyment of the polyment of the polyment of the polyment of the polyment of the polyment of the polyment of the polyment of the polyment of the polyment of the polyment of the polyment of the polyment of the polyment of the polyment of the polyment of the polyment of the polyment of the polyment of the polyment of the polyment of the polyment of the polyment of the po
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WPI; 2003-268312/26.
GENBANK; Q07439.
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Sequence 641 AA;

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Rat Protein Q07439, SEQ ID NO 10478.

(first entry)

29-JAN-2004

ADD45046;

ADD45046 standard; protein; 641 AA

RESULT 29 ADD45046

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derivative or allelic variation of the nucleic acid sequence. Also claimed are a vector comprising the novel polymucleotide. Also claimed are a vector comprising the nucleic acid sequence. Also comprising the vector, a method for identifying a nucleotide sequence which is differentially regulated in an animal subjected to pain and a which is differentially regulated in an animal subjected to pain and a set that increases or decreases the expression of the polymucleotide sequence that is differentially expressed in neuronal tissue of a first animal subjected to pain, a method for identifying a compound which regulates the expression of a polymucleotide sequence which is differentially expressed in an animal subjected to pain, a method for identifying a compound that regulates the activity of one or more of the polymucleotides, a method for producing a pharmaceutical composition, a method for identifying a compound or small molecule that regulates the activity in an animal of one or more of the polympeptides given in the specification, a method for identifying a compound useful in treating a specification, a method for identifying a compound useful in treating
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Rat; pain; neuronal tissue; gene therapy; spinal segmental nerve injury; chronic constriction injury; CCI; spared nerve injury; SNI; Chung.
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                                   invention discloses a composition comprising two or more isolated rat
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01-NOV-2001; 2001US-0346382P.
26-NOV-2001; 2001US-0333347P.
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                                                                                                                                                                                                                                                                                                     (first entry)
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                                                                                                                                                                                                                                                                                    (revised)
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                                                                                                                                                                                                                                                                                                                                                                                                                             Rattus norvegicus.
Unidentified.
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of the specification) which is differentially expressed during pain. Note: The sequence data for this patent did not form part of the printed specification, but was obtained in electronic form directly from WIPO at
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          The invention relates to a method of treating an angiogenesis-mediated
                                                                                                                                                                                                                                                                                                                                                                                                                                564 EADKKKVLDKCOEVISWLDSNTLAEKEEFPHKREELERVCNPIISGLYQGAGAPGAGGFG
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                                                                                                                          7; Length 641;
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                                                                                                                                                            Indels
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             angiogenesis; angiogenesis modulating protein;
                                                                                                                          Score 1258; DB 7;
Pred. No. 4.1e-96;
7; Mismatches 5;
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                                                      ftp.wipo.int/pub/published_pct_sequences
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Rat angiogenesis modulating protein #9.
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26-JUN-2002; 2002US-0391758P.
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Best Local Similarity 95.3;
Matches 246; Conservative
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N-PSDB; ADF30464.
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disorder in a subject. The method is useful for treating angiogenesis-
mediated disorder, e.g., retinal or choroidal neovascularisation or
diseases associated with chronic inflammation, myocardial ischaemia,
stroke, coronary artery disease or peripheral vascular disease. The
present sequence is used in the exemplification of the invention.
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The invention relates to a method of treating an angiogenesis-mediated disorder in a subject. The method is useful for treating angiogenesis-mediated disorder, e.g., retinal or choroidal neovascularisation or diseases associated with chronic inflammation, myocardial ischemia, stroke, coronary artery disease or peripheral vascular disease. The present sequence is used in the exemplification of the invention.
                                                                                                                                                                                                                                        384 KSENVQDLLLLDVAPLSLGLETAGGVMTALIKRNSTIPTKOTQTFTTYSDNQPGVLIQVY
                                                                                                                                                                                                                                                                         61 EGERAMTKDNNLLGRFELSGIPPAPRGVPQIEVTFDIDANGILNVTATDKSTGKANKITI
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                                                                                                                                             Length 641;
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                                                                                                                                          95.7%; Score 1258; DB 7;
95.3%; Pred. No. 4.1e-96;
ive 7; Mismatches 5;
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Matches 246; Conservative
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                                                                                                                                                                                                                                                                                                                                                                                                                                 ISWLDANTLAEKDEFEHKRKELEQVCNPIISGLYQGAGGPGGFGAQGPKGGSGSGPTI 254
            of the HSp70 sequence to direct other proteins into the cell. It was shown that HSp70 fragments are able to direct other proteins into the cell, a feature which can be used in the treatment of transplant rejection, autoimmune diseases such as rheumatoid arthritis, multiple sclerosis, diabetes, asthma, inflammatory bowel disease, psoriasis, hepatitis, Graves' disease and viteligo, inflammatory diseases including osteoarthritis, pancreatitis and adult respiratory distress syndrome, cancer, vascular diseases (such as restenosis and atherosclerosis) and DNA and RNA viral replication diseases (including herpes)
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 This fusion protein was created in order to determine the ability
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  /note= "peptides comprising an intact domain from the ATPase fragment of hsp70 are claimed; the peptides are homologous to sequences conserved between SLIP1 and
                                                                                                                                                                                                                                                                                                                                RFELSGIPPAPRGVPQIEVTFDIDANGILNVTATDKSTGKANKITITNDKGRLSKEBIER
                                                                                                                                                                                                                                                                                                                                                                                          MVQEAEKYKAEDEVQRERVSAKNALESYAFNMKSAVEDEGLKGKI SEADKKKVLDKCQEV
                                                                                                                                                                                                                                                                                                                                                                                                                                                   I SWLDANTLAEKDEFEHKRKELEQVCNPII SGLYQGAGGPGGFGAQGPKGGSGSGPTI
                                                                                                                                                                                                                                                                                   1 PLSLGLETAGGVMTALIKRNSTIPTKQTQIFTTYSDNQPGVLIQVYEGERAMTKDNNLLG
                                                                                                                                                                                                                                                                                                               RFELSG1PPAPRGVPQ1EVTFD1DANG1LNVTATDKSTGKANK1T1TNDKGRLSKEE1ER
                                                                                                                                                                                                                                                     PLSLGLETAGGVMTALIKRNSTIPTKQTQIFTTYSDNQPGVLIQVYEGERAMTKDNNLLG
                                                                                                                                                                                                                         Gaps
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                                                                                                                                                                                            Length 244;
                                                                                                                                                                                                                         0; Indels
                                                                                                                                                                                           95.1%; Score 1249; DB 3;
100.0%; Pred. No. 6.7e-96;
iive 0; Mismatches 0;
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/label= 44kD_ATPase_fragment
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Mature mouse sperm 70kD heat shock protein.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               74.5kD mycoplasma protein'
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                AAR43004 standard; protein; 641 AA.
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/label= IA
/note= "part"
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/label= IIA
/note= "part"
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/label= IA
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(revised)
(first entry)
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                                                                                                                                                                                      Query Match
Best Local Similarity 100.
Matches 244, Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     40. .115
/label= I
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                                                                                                                                                               Sequence 244 AA;
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25-MAR-2003
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Region
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The likelihood of mammalian fertilisation is decreased by contacting a gamete with a sulphaglycolipid immobilising protein 1 (Silpl)/ Sulphated glyco-moiety interfering composition. The interfering composn. is e.g. the heat shock 70kD protein, Silpl (or analogue such as the mouse Silpl hat shock 70kD protein, Silpl (or analogue and sequence AARA3002) or the 74.5kD mycoplasma protein (AARA3003). (Updated on 25-MAR-2003 to correct PN field.)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      121 TNDKGRLSKEBIBRMVQEAEKYKAEDEVQRERVSAKNALESYAFNMKSAVEDEGLKGKIS 180
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Mammalian fertilisation decrease for detecting and treating infertility using sulpho glyco lipid immobilising protein 1-sulphated-glyco moiety interfering compsn., for mycoplasma infection treatment.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             384 KSENVQDLLLDDVAPLSLGLETAGGVMTALIKRNSTIPTKQTQTFTTYSDNQPGVLLQVY
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 heat shock protein; HSP; cytokine; CC chemokine; nitric oxide; cancer;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             61 EGERAMIKDNNLLGRFELSGIPPAPRGVPQIEVTFDIDANGILNVTATDKSTGKANKITI
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      181 EADKKKVLDKCQEVISWLDANTLAEKDEFEHKRKELEQVCNPIISGLYQGAGGPGGFG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        1 KSENVQDLLLLDVAPLSLGLETAGGVMTALIKRNSTIPTKQTQIFTTYSDNQPGVLIQVY
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 94.3%; Score 1239; DB 2; 93.4%; Pred. No. 1.6e-94; ive 11; Mismatches 6;
                                                                                                                                                                                                                                             Tanphaichitr N;
                                                                                                                                                                                                                                                                                                                                                            Claim 2, 17; Page 60-62; 77pp; English.
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229. .306
/label= IIB
307. .385
/label= IIA
/note= "part"
                                                                                                                                                                                                  (BERL-) BERLEX LAB INC.
(OTTA-) OTTAWA CIVIC HOSPITAL.
                                                                                                                                             93WO-US003816,
                                                                                                                                                                        92US-00873961
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                                                                                                                                                                                                                                             DH, Lingwood CA,
                                                                                                                                                                                                                                                                        WPI; 1993-368422/46.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Mouse HSp70 protein.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Sequence 641 AA;
                                                                                                                                                                        24-APR-1992;
                                                                                      WO9321954-A1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               08-AUG-2003
                                                                                                                  11-NOV-1993
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Matches
    Domain
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                                                                                                                                                                                                                                                                            The invention relates to a novel heat shock protein fragment (HSP) that can increase the level of one or more cytckines and/or one or more CC chemokines and/or nitric oxide produced by a cell, above that caused by the corresponding full length heat shock protein. The protein fragment protein fragment is useful in therapy, in treatment or prophylaxis of a disease and in the manufacture of a medicament for prophylaxis of a prophylaxis of a disease such as microbial infection, viral infection, prophylaxis of a disease of the immune system or cancer. The fragment is also useful as an adjuvant in vaccines, preferably, anti-HIV vaccines. The present sequence represents the mouse HSP70 protein
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                                                                                                                                                                                                            Novel heat shock protein fragment useful for treating microbial infection, viral infection or cancer, that can increase the level of cytokines and/or CC chemokines and/or nitric oxide produced by a cell.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Gaps
antimicrobial; virucide; cytostatic; microbial infection; anti-HIV; viral infection; immune system disorder; vaccine; HSP70; mouse.
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                                                                                                                                                                                                                                                                                                                                                                                                                                            94.3%; Score 1239; DB 6; Length 641;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                6; Indels
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                                                                                                                                                                   ×
                                                                                                                                                                    Wang
                                                                                                                                                                                                                                                           Example 3; Page 17-20; 30pp; English
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     641 AA.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       AQGPKGGSGSGPTIEEVD 258
                                                                                                                                                                    Singh M,
                                                                                                                       03-OCT-2001; 2001GB-00023756
                                                                                                 03-OCT-2002; 2002WO-GB004475
                                                                                                                                             (UNICO ) KINGS COLLEGE LONDON
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                                                                                                                                                                   Kelly CG,
                                                                                                                                                                                         WPI; 2003-430189/40.
                                                                                                                                                                                                                                                                                                                                                                                                                     Sequence 641 AA;
                                                     WO2003029289-A2
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                                                                            10-APR-2003
                                                                                                                                                                   Lehner T,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            384
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                               Mus sp.
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        443
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     1 KSENVQDLLLLDVAPLSLGLETAGGVMTALIKRNSTIPTKQTQIFTTYSDNQPGVLIQVY
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Gaps
HSP70.1; HSP70.3; inducible; induction; TNF; interferon-gamma; tumour.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          New pharmaceutical composition comprising HSP70 that is endogenously
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  induced by heat and TNF, useful for the manufacture of a medicament
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Length 641;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Rat heat shock protein Hsp70.1 protein sequence SEQ ID NO:2.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ch 94.3%; Score 1239; DB 7; Il Similarity 93.4%; Pred. No. 1.6e-94; 241; Conservative 11; Mismatches 6;
                                                                                                                                                                                                                                                                                                                               (VLAA-) VLAAMS INTERUNIVERSITAIR INST BIOTECHNOG.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Disclosure; SEQ ID NO 4; 53pp; English.
                                                                                                                                                                                                                                                                                                                                                                              Van Molle W,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                AAB23650 standard; protein; 642 AA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    258
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shock protein-70; HSP70; tumour necrosis factor;
                                                                                                                                                                                                                             24-JAN-2003; 2003WO-EP000786
                                                                                                                                                                                                                                                                             24-JAN-2002; 2002EP-00075297
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    241 AQGPKGGSGSGPTIEEVD
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             treating systemic tumor.
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                                                                                                                                                                                                                                                                                                                                                                              Wielockx
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Best Local Similarity
Matches 241; Conserv
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                                                                                                                         WO2003061684-A2
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                                                                                                                                                                           31-JUL-2003
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                                                                            Mus sp
                          heat;
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                                                                                                                                                                                                                                                                                                                      peptide containing a CTL (cytocoxic T lymphocyte) epitope recognised by cytotoxic T cells and a protein containing the ATPase domain of a heat shock protein. Also described are: (1) a drug composition containing (I) as active ingredient; (2) and (4) a transformant which can retain the containing the DNA of (2); and (4) a transformant which can retain the protozoacide activities, and can be used as a cellular immune response inducer. The protein is useful as an active ingredient for drug compositions in preventing and/or treating infectious diseases such as malaria or cancer e.g. to provide systemic immunity against leukaemia. The present sequence respectable as a specifically claimed heat shock protein for use in a fused protein of the present invention
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           443
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  EGERAMTKDNNLLGRFELSGIPPAPRGVPQIEVTFDIDANGILNVTATDKSTGKANKITI 120
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              EADKKKVIDKCQEVISWIDANTIAEKDEFEHKRKELEQVCNPIISGLYQGAGGPGGFG 240
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Fused protein capable of inducing cellular immune response, useful as active ingredient for drug compositions in preventing and/or treating infectious diseases such as malaria or cancer.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     1 KSENVQDLLLLDVAPLSLGLETAGGVMTALIKRNSTIPTKQTQIFTTYSDNQPGVLIQVY
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Gaps
                                                                                                                                                                                                                                                                                                                present invention describes a fused protein (I) prepared from a
immune response; infectious disease; malaria; cytotoxic T cell; cytostatic; immunostimulant; cellular immune response inducer; protozoacide; leukaemia; cancer.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              <del>,</del>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    93.5%; Score 1228.5; DB 3; Length 642; 93.1%; Pred. No. 1.2e-93; cive 11; Mismatches 6; Indels 1;
                                                                                                                                                                                                                                                                                        Claim 3; Page 39-42; 72pp; Japanese
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                642 AA
                                                                                                                                                                    (SUME ) SUMITOMO ELECTRIC IND CO.
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                                                                                                                                                                                            Yui K;
                                                                                                                       18-FEB-2000; 2000WO-JP000941.
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Best Local Similarity 93.1%;
Matches 241; Conservative 1
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                                                                                                                                                                                            Shinbara N, Udono H,
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Sequence 642 AA;
                                                                        WO200049041-A1
                                                                                                                                              19-FEB-1999;
                                                                                               24-AUG-2000
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                                                  Rattus
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ADJ27275

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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                This sequence represents mouse heat shock protein-70.1 (HSP70.1). HSP70.1 and HSP70.3 are inducible members of the HSP70 family of proteins. The heat shock proteins of the invention are endogenously induced by heat tumour necrosis factor (MTP). This heat shock protein may be used in a composition which further comprises interferon-gamma, and/or a chemotherapeutic compound. The pharmaceutical composition is useful for the manufacture of a medicament for treating systemic tumour.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          443
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          384 KSENVQDLILLDVAPLSIGLETAGGVWTALIKRNSTIPTKQTQTFTTYSDNQPGVLIQVY
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      EGERAMIKDNNLLGRFELSGIPPAPRGVPQIEVTFDIDANGILNVTATDKSTGKANKITI
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1 KSENVQDLLLLDVAPLSLGLETAGGVMTALIKRNSTIPTKQTQIFTTYSDNQPGVLIQVY
                                                                                 heat shock protein-70; HSP70; HSP70.1; HSP70.3; inducible; induction; heat; tumour necrosis factor; TNF; interferon-gamma; tumour.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   New pharmaceutical composition comprising HSP70 that is endogenously induced by heat and TNF, useful for the manufacture of a medicament
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    1;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        93.5%; Score 1228.5; DB 7; Length 642; 93.1%; Pred. No. 1.2e-93; ive 11; Mismatches 6; Indels 1;
                                                                                                                                                                                                                                                                                                                                                                                 (VLAA-) VLAAMS INTERUNIVERSITAIR INST BIOTECHNOG
                                                                                                                                                                                                                                                                                                                                                                                                                          Mahieu T;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Disclosure; SEQ ID NO 2; 53pp; English
                                                                                                                                                                                                                                                                                                                                                                                                                        Van Molle W,
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                                                                                                                                                                                                                                                                                        24-JAN-2003; 2003WO-EP000786.
                                                                                                                                                                                                                                                                                                                                  24-JAN-2002; 2002EP-00075297.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Query Match
Best Local Similarity 93.1%
Matches 241; Conservative
  (first entry)
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 treating systemic tumor.
                                                                                                                                                                                                                                                                                                                                                                                                                             Libert C, Wielockx B,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                    2003-608168/57.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            N-PSDB; ADJ27274
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Sequence 642 AA;
                                                                                                                                                                                                   WO2003061684-A2
                                         Mouse HSP70.1
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20-MAY-2004
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Abnormal transcription of intracellular HSP70mRNA under acute and chronic continuous load of stress in a human being and its application.
       181 EADKKKVLDKCQEVISWLDANTLAEKDEFEHKRKELEQVCNPIISGLYQGAGGPGGFG 240
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            This sequence represents the human heat shock protein SHSP70 amino acid
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    sequence. Human heat shock proteins are located on chromosomes 6p21.3-2 and 14q22-24. The invention relates to the abnormal transcription of intracellular HSP70mRNA under acute and chronic stress load in a human. The abnormal transcription of HSP70 can be used in the improvement of stress and response and diagnosis of stress diseases including rheumatisms, schizophrenia, depression and nephrotic syndrome
                               564 EADKKKVLDKCQEVISWLDANTLAEKDEPEHKRKELEQVCNPIISGLYQGAGGPGGFG
                                                                                                                                                                                                                                                                                                                                                                                                                                            Human; heat shock protein; HSP70; chromosome 6p21.3-22; stress; chromosome 14q22-24; transcription; rheumatism; schizophrenia; depression; nephrotic syndrome; SHSP70.
                                                                                                                                                                                                                                                                                                                                                                                                     Human heat shock protein SHSP70 amino acid sequence.
                                                                                                                                                                                                                                                                 AAY88413 standard; protein; 554 AA.
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                                                                                                 241 A 241
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                                                                                                                                          624
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 The invention relates to a novel method of identifying compounds that inhibit proliferation of cells comprising contacting a test compound with a cell which overexpresses HBP72 (heat shock protein 72), and determining if the test compound inhibits activity or expression of HBP72.

Optionally, HBP72 is contacted with the test compound under optimum conditions to allow the two components to interact and bind, forming a compitation, comprising compounds that inhibit HBP72-mediated UNK phosphatase comprising a cerivation, comprising contacting a test compound with a cell which expresses HBP72, exposing the cell to a heat induced stress and determining if the compound inhibits UNK phosphatase activity. The invention additionally encompasses compositions comprising an inhibitor of HBP72 or UNK phosphatase activity are useful for inhibiting the proliferation of cells. Modulation of the activity of the UNK phosphatase or HBP72 is used to treat a proliferative disorder use cancers (e.g., leukaemia, lymphoma, solid tumours such as sarcomas and carcinomas, breast cancer, prostate cancer). The compounds that inhibit HBP72 function are administered to a patient compounds that inhibit HBP72 function are administered to a patient of a patient continity or alse in a proposation or a method of HBP72 expression or a method of HBP72 expression or a method of HBP72 expression or a method of indicating and increase of HBP72 expression or a method of indicating and increase of HBP72 expression or a method of indicating and indicated the administered to a patient or a partier or maintenance of HBP72 expression or a method of indicating and increase or disorder mediated by an increase of HBP72 expression or a mediated by an increase of HBP72 expression or a mediated by an increase of HBP72 expression or a mediated by an increase of HBP72 expression or a mediated by an increase of HBP72 expression or a mediated by an increase and increase in a mediated by an increase and increase and increase and increase in a mediated by an increase a
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Identifying compounds that inhibit proliferation of cells and capable of modulating the expression of heat shock protein 72 gene and/or activity of Hsp72 useful for treating cancers such as leukemia, lymphoma.
                                              Human Hsp72; heat shock protein 72; chromosome 6p21.3; Hsp72 inhibitor; expression modulator; JNK phosphatase inhibitor; antippoliferative; drug screening; cancer; leuksemia, lymphoma; solid tumour; sarcoma; carcinoma; breast cancer; prostate cancer; premalignant condition.
Human Hsp72 (heat shock protein 72).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Example; Fig 16B; 77pp; English.
                                                                                                                                                                                                                                                                                                           17-MAR-2000; 2000WO-US007350.
                                                                                                                                                                                                                                                                                                                                                                                                                                                   Sherman M;
                                                                                                                                                                                                                                                                                                                                                                                                     (PHYL-) PHYLOGENY INC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               WPI; 2000-647056/62.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       N-PSDB; AAA97541
                                                                                                                                                                                                            WO200054814-A1.
                                                                                                                                                                   Homo sapiens
                                                                                                                                                                                                                                                                                                                                                    18-MAR-1999;
                                                                                                                                                                                                                                                             21-SEP-2000.
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99JP-00257146.

(first entry)

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121 TNDKGRLSKEEIERMVQEAEKYKAEDEVQRERVSAKNALESYAFNMKSAVEDEGLKGKIS 180
                                                                                                                                                                         298 KSENVQDLLLLDVAPLSLGLETAGGVMTALIKRNSTIPTKQTQIFTTYSDNQPGVLIQVY
                                                                                                                                                                                                                                                            EGERANTKONNLLGKPELSGIPPAP-GVPQIEVTFDIDANGILNYTATDKSTGKANKITI
                                                                                                                                                                                                                                                                                                                                                        417 TNDHGRLSKEEIERWVQKAEKYKAEDEVQRERVSAKNALESYAFNMKSAVEDEGLKGKIS
                                                                                                                                       1 KSENVQDLLLLDVAPLSLGLETAGGVMTALIKRNSTIPTKQTQIFTTYSDNQPGVLIQVY
                                                                                                                                                                                                                                    EGERAMTKDNNLLGRFELSGI PPAPRGVPQI EVTFDI DANGI LNVTATDKSTGKANKI TI
                                                                                                                                                                                                                                                                                                                                                                                                                       EADKKKVLDKCQEVISWLDANTLAEKDEFEHKRKELEQVCNPIISGLYQGAGGPGFGFG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                   477 EADKKKVLDECQEVISNLDANTLAEKDEFEHKRKELEQVCNPIISGLYQCAGGPGGPG
                                                                                         <u>.</u>ز
                                              DB 3; Length 554;
                                         Score 1217.5; DB 3; Length
Pred. No. 8.2e-93;
3; Mismatches 8; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    241 AQGPKGGSGSGPTIEEVD 258
                                              92.7%;
                                                                                         246; Conservative
                                           Query Match
Best Local Similarity
Sequence 554 AA;
                                                                                                                                                                                                                                    61
                                                                                                                                                                                                                                                                               358
                                                                                                                                                                                                                                                                                                                                                                                                                       181
                                                                                            Matches
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                                                                                                                                                                                                                                                                                                                                                                                                                                             TNDKGRLSKEEIERMVQEAEKYKAEDEVQRERVSAKNALESYAFNMKSAVEDEGLKGKIS 180
                                                                                                                                                                                                                                                                                                     443
                                                                                                                                                                                                                                                                                                                                                   EGERAMTKONNLLGRFELSGIPPAPRGVPQIEVTFDIDANGILMVTATDKSTGKANKITI 120
                                                                                                                                                                                                                                                                                                                                                                                                                                                                        9
                                           or activity relative to normal levels. The present sequence represents human Hsp72 used in the exemplifications of the invention
                                                                                                                                                                                                                                                          KSENVQDLLLLDVAPLSLGLETAGGVMTALIKRNSTIPTKQTQIFTTYSDNQPGVLIQVY
                                                                                                                                                                                                                                                                                                     KSENVQDLLLLDVAPLSLGLETAGGVMTALIKRNSTI PTKQTQI FTTYSDNQPGVLIQVY
                                                                                                                                                                                                                                                                                                                                                                                               EGERAMTKDNNLLGRFELSGI PPAPRGVPQI EVTFDIDANGI LNVTATDKSTGKANKI TI
                                                                                                                                                                                                              ö
                                                                                                                                                                Length 624;
                                                                                                                                                                                                           Indels
                                                                                                                                                           93.1%; Score 1223; DB 3;
100.0%; Pred. No. 3.3e-93;
ive 0; Mismatches 0;
                                                                                                                                                                                 Local Similarity 100 les 241; Conservative
                                                                                                                  Sequence 624 AA;
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384 61 444

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Query Match

Best Loca Matches

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180
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          EGERANTKDNNLLGKFELSGIFFAP-CVPQIEVTFDIDANGILMYTATDKSTGKANKITI 416
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                TNDHGRLSKEEIERMVQKAEKYKAEDEVQRERVSAKNALESYAFNMKSAVEDEGLKGKIS 476
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      357
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             EADKKKVLDKCQEVISWLDANTLAEKDEFEHKRKELEQVCNPIISGLYQGAGGPGGFG 240
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             536
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        This sequence represents the human heat shock protein SHSP70 amino acid sequence. Human heat shock proteins are located on chromosomes 6p21.3-22 and 14g22-24. The invention relates to the abnormal transcription of intracellular HSP70mRNA under acute and chronic stress load in a human. The abnormal transcription of HSP70 can be used in the improvement of stress and response and diagnosis of stress diseases including rheumatisms, schizophrenia, depression and nephrotic syndrome
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 EADKKKVLDECQEVISNLDANTLAEKDEFEHKRKELEQVCNPIISGLYQGAGGPGFGFG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      KSENVODLLLLDVAFLSLGLETAGGVMTALIKRNSTIPTKQTQIFTTYSDNQPGVLIQVY
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         EGERAMTKDNNLLGRFELSGIPPAPRGVPQIEVTFDIDANGILNVTATDKSTGKANKITI
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           TNDKGRLSKEEIERMVQEAEKYKAEDEVQRERVSAKNALESYAFNMKSAVEDEGLKGKIS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    KSENVQDLLLLDVAPLSLGLETAGGVMTALIKRNSTIPTKQTQIFTTYSDNQPGVLIQVY
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Gaps
                                                                                                                                                                                                                                          Human; heat shock protein; HSP70; chromosome 6p21.3-22; stress;
chromosome 14g22-24; transcription; rheumatism; schizophrenia;
depression; nephrotic syndrome; SHSP70.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    1,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Length 554;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  10, Indels
                                                                                                                                                                                                          Human heat shock protein SHSP70 amino acid sequence.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  DB 3;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Score 1196.5; DB 3
Pred. No. 4.6e-91;
3; Mismatches 10;
                                                                                                       AAY88412 standard; protein; 554 AA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Disclosure, Fig 5; 11pp; Japanese.
AQGPKGGSGSGPTIEEYD 554
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     (HOKE-) HOKEN KAGAKU KENKYUSHO
                                                                                                                                                                                                                                                                                                                                                                                                                                                     95JP-00158581.
                                                                                                                                                                                                                                                                                                                                                                                                                   99JP-00257146.
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Best Local Similarity 94.6%;
Matches 244; Conservative
                                                                                                                                                                          (first entry)
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Sequence 554 AA;
                                                                                                                                                                                                                                                                                                                                                JP2000069999-A.
                                                                                                                                                                                                                                                                                                                Homo sapiens
                                                                                                                                                                                                                                                                                                                                                                                                                   01-JUN-1995;
                                                                                                                                                                                                                                                                                                                                                                                                                                                     01-JUN-1995;
                                                                                                                                                                          31-JUL-2000
                                                                                                                                                                                                                                                                                                                                                                                  07-MAR-2000
                                                                                                                                        AAY88412;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      М
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      298
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                   537
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                                                                     RESULT 41
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This invention relates to novel mitochondrial targets that can be used for therapeutic intervention in treating a disease associated with altered mitochondrial function. Specifically, it refers to a method for identifying proteins of the human heart mitochondrial proteome that are useful for drug screening assays, as well as therapeutic targets. The present invention describes a method for identifying such proteins that can be used in the treatment of various diseases associated with altered mitochondrial function including diabetes mellitus, Huntington's disease, osteoarthritis, laber's hereditary optic neuropathy (LHON), mitochondrial concephalopathy lactic acidosis and stroke (MELAS), myoclonic epilepsy ragged red fibre syndrome (MERRF) or cancer. Accordingly, these compositions have neuroprotective, nootropic, antidiabetic, anticonvulsant, antiarthritic, osteopathic, ophthalmological and cyclostatic activities. This polypeptide sequence is a human heart mitochondrial protein of the invention.
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                                                                                                                                                                      Huntington's disease; osteoarthritis;
Leber's hereditary optic neuropathy; LHON;
mitochondrial encephalopathy lactic acidosis and stroke; MELAS;
myoclonic epilepsy ragged red fibre syndrome; MERRF; cancer;
neuroprotective; nootropic; antidiabetic; anticonvulsant; antiarthritic;
osteopathic; ophthalmological; cytostatic.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Identifying a mitochondrial target for drug screening assays and for treating diseases associated with altered mitochondrial function, comprises detecting a modified polypeptide in a sample and correlating
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            386 KSEKVQDLLLLDVAPLSLGLETAGGVMTALIKRNSTIPTKQTQIFTTYSDNQPGVLIQVY
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                61 EGERAMTKDNNLLGRFELSGIPPAPRGVPQIEVTFDIDANGILNVTATDKSTGKANKITI
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        446 EGERAMTKDNNLLGRFDLTGIPPAPRGVPQIEVTFDIDANGILNVTAMDKSTGKVNKITI
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      1 KSENVQDLLLLDVAPLSLGLETAGGVMTALIKRNSTIPTKQTQIFTTYSDNQPGVLIQVY
                                                                                                                  Human heat mitochondrial protein as a therapeutic target SeqID1675.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ä
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Glenn
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            83.9%; Score 1103; DB 7; Length 641; 82.3%; Pred. No. 3.5e-83;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Indels
                                                                                                                                                      mitochondrial; human; screening assay; diabetes mellitus;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Taylor SW,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  16; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Gibson BW,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Claim 1; SEQ ID NO 1675; 180pp; English.
ADJ69869 standard; protein; 641 AA.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Zhang B,
                                                                                                                                                                                                                                                                                                                                                                                                                                                            12-APR-2002; 2002US-0372843P.
17-JUN-2002; 2002US-0389987P.
20-SEP-2002; 2002US-0412418P.
                                                                                                                                                                                                                                                                                                                                                                                                                          04-APR-2003; 2003WO-US010870.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          BUCK INST AGE RES.
                                                                            (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Best Local Similarity 82.33
Matches 218; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Fahy ED,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          WPI; 2003-845369/78
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        with the disease.
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                                                                                                                                                                                                                                                                                                                                                WO2003087768-A2.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        (MITO-) MITOKOR
                                                                                                                                                                                                                                                                                                            Homo sapiens.
                                                                          06-MAY-2004
                                                                                                                                                                                                                                                                                                                                                                                    23-OCT-2003
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Warnock DE;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Ghosh SS,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Query Match
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AQGPKGGSGSGFTIEEYD

EGERAMTKDNNLLGRFELSGI PPAPRGVPQI EVTFDI DANGI LNVTATDKSTGKANKI TI

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240
                                                                                                                                                                                616
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Method for diagnosis of cancer by detecting aberrrant expression of gene.
                                                                                                                                                    EADKKKVLDKCQEVI SWLDANTLAEKDEFEHKRKELEQVCNPI I SGLYQGAGGPGGFG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             cognate 73; HSC73; cancer gene; diagnosis; neoplasia;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  646;
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81.7%; Pred. No. 5.8e-83;
ive 23; Mismatches 20; Indels
                                                                                                                                                                                                                                        241 AQGPKGGSG-----SGPTIEEVD 258
                                                                                                                                                                                                                                                                          CTGPACGTGYVPGRPATGPTIEEVD 641
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            detection; carcinoma; breast; tumour
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Mcgee JO;
                                                                                                                                                                                                                                                                                                                                                                                                                                                    AAY17408 standard; protein; 646 AA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Disclosure; Fig 6; 49pp; English.
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98GB-00018118.
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Mouse heat shock cognate 73
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               (ISIS-) ISIS INNOVATION LTD
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       (first entry)
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     WPI; 1999-337489/28.
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Mus musculus
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       26-JUL-1999
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        19-AUG-1998;
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                                                        180
                                                                           504 TNDKGRLSKEDIERMVQEAEKYKAEDEKQRDKVSSKNSLESYAFNMKATVEDEKLQGKIN 563
                                                                                                                                  237
                                                                                                                                                      503
121 TNDKGRLSKEEIERMVQEAEKYKAEDEVQRERVSAKNALESYAFNMKSAVEDEGLKGKIS
                                                                                                                                    181 EADKKKVLDKCQEVISWLDANTLAEKDEFEHKRKELEQVCNPIISGLYQGAGG-PG--PG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Fused protein capable of inducing cellular immune response, useful as active ingredient for drug compositions in preventing and/or treating infectious diseases such as malaria or cancer.
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ATPase; Hsp70; heat shock protein; cytotoxic T.lymphocyte; CTL; immune response: infectious disease; malaria; cytotoxic T cell;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                immune response; infectious disease; malaria; cytotoxic T cell. cytostatic; immunostimulant; cellular immune response inducer; protozoacide; leukaemia; cancer.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Query Match 83.8%; Score 1100.5; DB 3; Length 646; Best Local Similarity 81.7%; Pred. No. 5.8e-83; Matches 215; Conservative 23; Mismatches 20; Indels 5;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Mouse heat shock protein Hsc70 protein sequence SEQ ID NO:1.
                                                                                                                                                                                                                                     624 GFPGGGAPPSGGASSGPTIEEVD 646
                                                                                                                                                                                                               238 GF--GAQGPKGGSGSGPTIEEVD 258
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Claim 3; Page 36-39; 72pp; Japanese.
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                                                                                                                                                                                                                                                                                                                                                   AAB23649 standard; protein; 646
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          (SUME ) SUMITOMO ELECTRIC IND
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                                                                                                                                                                                                                                                                                                                                                                                                                                (first entry)
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     19-FEB-1999;
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KSENVODLLLLDVAPLSLGLETAGGVMTALIKRNSTIPTKQTQIFTTYSDNQPGVLIQVY

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                                                                                        TNDKGRLSKEEIERMVQEAEKYKAEDEVQRERVSAKNALESYAFNMKSAVEDEGLKGKIS 180
                                                                                                     EADKKKVLDKCQEVISWLDANTLAEKDEFEHKRKELEQVCNPIISGLYQGAGG-PG--PG 237
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KSENVQDLLLLDVAPLSLGLETAGGVMTALIKRNSTIPTKQTQIFTTYSDNQPGVLJQVY
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                                                                                                                                                                                                                                                                                                                                                         spinal cord; neuropathic pain; central sensitisation pain; pain; analgesic; gene therapy.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       of an isolated gene sequence in the screening of compounds
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Pinnock RD;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Claim 1; Page 170-172; 188pp; English
                                                                                                                                                                                                    GF--GAQGPKGGSGSGPTIEEVD 258
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                                                                                                                                                                                                                                                                                                                                      lat heat shock cognate protein 70.
                                                                                                                                                                                                                                                                    ABM04836 standard; protein; 646
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07-FEB-2002; 2002GB-00002883.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                  26-JUL-2002; 2002EP-00255229
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   diagnosing or treating pain.
                                                                                                                                                                                                                                                                                                                (first entry)
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       WPI; 2003-543489/52.
                                                                                                                                                                                                                                                                                                                                                                                                Rattus norvegicus.
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                                                                                                                                                                                                                                                                                                                 22-SEP-2003
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                                                                                                                                                                                     564 DEDKQKILDKCNEIISWLDKNQTAEKEEFEHQQKELEKVCNPIITKLYQSAGGMFGGMFG 623
             443
                                             120
                                                                           503
                                                                                                                                         563
                                                                                                                                                                         237
                                                                                                                                                                                                                                                                                                                                                                                                                                                                           human; disease state; cytostatic; antiinflammatory; ophthalmological; antiarteriosclerotic; vulnerary; gene therapy; phypoxia-regulated condition; tumourigenesis; angiogenesis; apoptosis; inflammation; erythropoiesis; glycolysis; gluconeogenesis; glucose transportation; catecholamine synthesis; iron transport; intric oxide synthesis; cancer; ischaenic condition; reperfusion injury; retinopathy; neonatal stress; pre-eclampsia; atherosclerosis; inflammatory condition; wound healing.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 New substantially purified polypeptide, useful for diagnosing or treat a hypoxia-regulated condition, such as cancer, ischemia, reperfusion injury, retinopathy, pre-eclampsia, atherosclerosis, inflammation, or
                                                                                                                          121 TNDKGRLSKEEIERMVQEAEKYKAEDEVQRERVSAKNALESYAFNMKSAVEDEGLKGKIS
                                                                                                                                                                         181 EADKKKVLDKCQEVISWLDANTLAEKDEFEHKRKELEQVCNPIISGLYQGAGG-PG--PG
                                             EGERAMTKDNNLLGRFELSGI PPAPRGVPQIEVTFDIDANGILNVTATDKSTGKANKITI
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Mundy CR;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Ward NR, Harris RA,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Claim 25; SEQ ID NO 83; 424pp; English.
                                                                                                                                                                                                                                                                                                                                                                                                                                                   Human disease related protein SeqID83.
                                                                                                                                                                                                                                                                         624 GFPGGGAPPSGGASSGPTIEEVD 646
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                                                                                                                                                                                                                                             238 GF--GAQGPKGGSGSGPTIEEVD
                                                                                                                                                                                                                                                                                                                                                        641
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         23-AUG-2001; 2001GB-00020558.
05-OCT-2001; 2001GB-00024037.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         23-AUG-2002; 2002WO-GB003892.
                                                                                                                                                                                                                                                                                                                                                        ADD18652 standard; protein;
                                                                                                                                                                                                                                                                                                                                                                                                                      (first entry)
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N-PSDB; ADD18653.
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         injury, retind
wound healing.
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83.8%; Score 1100.5; DB 6; Length 646; 81.7%; Pred. No. 5.8e-83; .ive 23; Mismatches 20; Indels 5;

Query Match
Best Local Similarity 81.7
Matches 215; Conservative

Sequence 646 AA;

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         including processes such as glycolysis, gluconeogenesis, glucose transportation, catecholamine synthesis, iron transport or nitric oxide synthesis. The disease includes cancer, ischaemic conditions, reperfusion injury, retinopathy, neonatal stress, recelampsia, atherosclerosis, inflammatory conditions or wound healing. The present sequence is that of a disease related protein of the invention.
                                                                                                                                                                            445
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                                                                                                                                                                                                                                                                    565
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   protein kinase stimulator; protein kinase inhibitor; human; FOXC2; FOXC2-interacting protein; FOXC2 protein complex; obesity; hypertriglyceridemia; diet-induced insulin resistance; type 2 diabetes; anorexia; HSC71; heat shock cognate protein-71.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 New substantially pure FOXC2 protein complex, useful for treating or preventing a medical condition treatable by modulated FOXC2 activity, e.g. obesity, hypertriglyceridemia, diet-induced insulin resistance or
                                                                                                                                                                                                                                                          TNDKGRLSKEEIERWYLDAEKYKAEDEVQREKIAAKNALESYAFNWKSVVSDEGLKGKIS
                                                                                                                                                                     KSEKVQDLLLLDVAPLSLGLETVGGVWTALIKRNSTIPPKQTQIFTTYSDNQPGVLIQVY
                                                                                                                                                                                                  EGERAMTKDINILIGRFELSGIPPAPRGVPQIEVTFDIDANGILINVTATDKSTGKANKITI
                                                                                                                                                                                                                                                                                        RADKKKVLDKCQEVISWLDANTLAEKDEPEHKRKELEQVCNPIISGLYQGAGGPGGFG
                                                                                                                                                                                                                                                                                                    KSENVQDLLLLDVAPLSLGLETAGGVMTALIKRNSTIPTKOTOIFTTYSDNOPGVLIQVY
                                                                                                                                                                                                             Gaps
 erythropoiesis, or the biological response to hypoxia conditions
                                                                                                                                 16;
                                                                                                          83.6%; Score 1099; DB 7; Length 641; 81.9%; Pred. No. 7.6e-83; ive 16; Mismatches 16; Indels 16
                                                                                                                                                                                                                                                                                                                                    241 AQGPKGGSG-----SGPTIEEVD 258
                                                                                                                                                                                                                                                                                                                                                 617 CTGPACGTGYVPGRPATGPTIEEVD 641
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30-APR-2002; 2002US-0377349P
                                                                                                                                                                                                                                                                                                                                                                                                               standard; protein;
                                                                                                                                                                                                                                                                                                                                                                                                                                                          (first entry)
                                                                                                                     Best Local Similarity 81.9
Matches 217; Conservative
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  (BIOV-) BIOVITRUM AB
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                                                                                      Sequence 641 AA;
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                                                                                                            Query Match
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ADA50750
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The invention comprises a protein complex of human FOXC2 protein and a FOXC2-interacting protein. The FOXC2 protein complex is useful for treating or preventing a medical condition treatable by modulated FOXC2 activity, such as: obesity, hypertrigheriadmia, diet-induced insulin resistance, type 2 diabetes, and anorexia. The present amino acid sequence represents a human FOXC2-interacting protein of the invention.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       SO4 DEDKQKILDKCNBIINWLDKNQTAEKERPEHQQKELEKVCNPIITKLYQSAGAMPGGMPG
                                                                                                                                                                                                                                                                                                1 KSENVQDLLLLDVAPLSLGLETAGGVMTALIKRNSTIPTKQTQIPTTYSDNQPGVLIQVY
                                                                                                                                                                                                                                                                                                                            EGERAMTKDNNLLGRFELSGI PPAPRGVPQIEVTFDIDANGILNVTATDKSTGKANKITI
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2
                                                                                                                                                                                                        DB 6; Length 586;
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                                                                                                                                                                                                                                                     20;
                                                                                                                                                                                                      83.5%; Score 1097.5; DB 81.4%; Pred. No. 9.1e-83;
                                                                                                                                                                                                                                                 24; Mismatches
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ostecarthritis;
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17-JUN-2002; 2002US-0389987P.
20-SEP-2002; 2002US-0412418P.
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                                                                                                                                                                                                 Query Match
Best Local Similarity 81.4<sup>3</sup>
Matches 214; Conservative
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BUCK INST AGE
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                                                                                                                                                            Sequence 586 AA;
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Warnock DE;
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This invention relates to novel mitochondrial targets that can be used for therapeutic intervention in treating a disease associated with altered mitochondrial function. Specifically, it refers to a method for identifying proteins of the human heart mitochondrial proteome that are useful for drug screening assays, as well as therapeutic targets. The present invention describes a method for identifying such proteins that can be used in the treatment of various diseases associated with altered mitochondrial function including diabetes mellitus, Huntington's disease, osteoarthritis, Leber's hereditary optic neuropathy (LHON), mitochondrial concephalopathy lactic acidosis and stroke (MELAS), myoclonic epilepsy ragged red fibre syndrome (MERAP) or cancer. Accordingly, these compositions have neuroprotective, nootropic, antidiabetic, antichondrial protein of the invention.
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  09
Identifying a mitochondrial target for drug screening assays and for treating diseases associated with altered mitochondrial function, comprises detecting a modified polypeptide in a sample and correlating
                                                                                                                                                                                                                                                                                                                                                                                                                                                                          EADKKKVILDKCOEVISWLDANTLAEKDEFEHKRKELEQVCNPIISGLYQGAGG-PG--PG
                                                                                                                                                                                                                                                                                                                                                                                                                                                        KSENVQDLLLLDVAPLSLGLETAGGVMTALIKRNSTIPTKQTQIFTTYSDNQPGVLIQVY
                                                                                                                                                                                                                                                                                                                                                                                                                            Gape
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                                                                                                                                                                                                                                                                                                                                                                                        Score 1097.5; DB 7; Length 586; Pred. No. 9.1e-83; 24; Mismatches 20; Indels 5;
                                                                               Claim 1; SEQ ID NO 1753; 180pp; English.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      564 GFPGGGAPPSGGASSGPTIEEVD 586
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97GB-00007132.
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                                                                                                                                                                                                                                                                                                                                                                                             83.5%;
ilarity 81.4%;
Conservative 2
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Best Local Similarity
Matches 214; Conserva
                                                  with the disease.
                                                                                                                                                                                                                                                                                                                                                                 Sequence 586 AA;
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08-APR-1997;
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                                                                                                                                       Proteins AAW54349-W54364 are examples of proteins produced in the endometrium during the hyperplasia, adenocarcinoma or proliferative phase of the endometrium. The presence and quantities of these proteins can be detected using 2D gel electrophoresis comparison of cell lysates. The proteins can be used as biochemical markers to detect the phase of the endometrium and can be measured in body fluids, obviating the need for endometrial biopsies
                                                                                                                                                                                                                                                                                                                                                                                                                                                                          443
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                                                                                                                                                                                                                                                                                                                                                                                                                         181 BADKKKVLDKCQEVISWLDANTLAEKDEFEHKRKELEQVCNPIISGLYQGAGG-PG--PG 237
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                                                                               Biochemical markers of human endometrium - useful for, e.g. diagnosis
                                                                                                                                                                                                                                                                                                             1 KSENVQDLLLLDVAPLSLGLETAGGVMTALIKRNSTIPTKQTQIFTTYSDNQPGVLIQVY
                                                                                                                                                                                                                                                                                                                              EGERAMTKDNNLLGRPELSGIPPAPRGVPQIEVTFDIDANGILNVTATDKSTGKANKITI
                                                                                                                                                                                                                                                                                                                                                                           Gaps
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                                                                                                                                                                                                                                                                                        2
                                                                                                                                                                                                                                                               Length 646;
                                                                                                                                                                                                                                                        83.5%; Score 1097.5; DB 2; Lengtu
81.4%; Pred. No. 1e-82;
... winmatches 20; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             tumour
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                                                                                                                    Disclosure; Page 23; 77pp; English
          (CLIN-) CENT CLINICAL & BASIC RES.
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                                                                                             hyperplasia and adenocarcinoma.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             detection; carcinoma; breast;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  97GB-00023412
98GB-00018118
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                                                                                                                                                                                                                                                                           Best Local Similarity 81.4 Matches 214; Conservative
                                  ъ,
                                                          WPI; 1998-207057/18
                                                                                                                                                                                                                                            Sequence 646 AA;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            05-NOV-1998;
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19-AUG-1998;
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                                  Byrjalsen I,
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                                                                                                                                                                                                                                                                    Query Match
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A method of diagnosis performed on a biological sample has been developed comprising detecting the aberrant expression of a gene at the heat shock cognate 73 (HSC73) locus or detecting a mutation at the HSC73 locus. The method is used for diagnosing neoplasia or a susceptibility to neoplasia especially malignant neoplasia, and carcinomas of the breast. Gene or protein therapy of mutated HSC73 is performed by administration of native HSC73, and the transgenic mammal is useful as an experimental model for technical development of gene therapy. The HSC73 gene was transfected into cell lines, which were introduced into test animals. These animals were injected with untransfected cells of a breast cancer line. Expression of wild type HSC73 prevented breast cancer cells forming tumours in the mice. The present sequence represents human HSC73 from the
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       443
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Method for diagnosis of cancer by detecting aberrrant expression of gene.
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ATPase, Hsp70; heat shock protein; cytotoxic T lymphocyte; CTL; immune response; infectious disease; malaria; cytotoxic T cell; cytostatic; immunostimulant; cellular immune response inducer;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                5,
                                                                                                                                                                                                                                                                                                                                                                                                                                                 Length 646;
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                                                                                                                                                                                                                                                                                                                                                                                                                                           Query Match 83.5%; Score 1097.5; DB 2; Length Best Local Similarity 81.4%; Pred. No. 1e-82; Matches 214; Conservative 24; Mismatches 20; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      GF--GAQGPKGGSGSGPTIEEVD 258
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 Mcgee JO;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             AAB23651 standard; protein; 646 AA
                                                                                                                         Disclosure; Fig 5; 49pp; English
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Bakkenist CJ, Koreth J,
                                    WPI; 1999-337489/28
                                                                                                                                                                                                                                                                                                                                                                         present invention
                                                   N-PSDB; AAX56457
                                                                                                                                                                                                                                                                                                                                                                                                          Sequence 646 AA;
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AAB23651
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The present invention describes a fused protein (I) prepared from a peptide containing a CTL (cytotoxic T lymphocyte) epitope recognised by cytotoxic T cells and a protein containing the ATPase domain of a heat shock protein. Also described are: (1) a drug composition containing (I) as active ingredient; (2) a DNA encoding (I); (3) an expression vector containing the DNA of (2); and (4) a transformant which can retain the expression vector of (3). (I) has cytostatic, immunostimulant and protoxoxacide activities, and can be used as a cellular immune response inducer. The protein is useful as an active ingredient for drug compositions in preventing and/or treating infectious diseases such as malaria or cancer e.g. to provide systemic immunity against leukaemia. The present sequence represents a specifically claimed heat shock protein for use in a fused protein of the present invention
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                                                                                                                                          Fused protein capable of inducing cellular immune response, useful as active ingredient for drug compositions in preventing and/or treating infectious diseases such as malaria or cancer.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       384 KSENVQDLLLLDVTPLSLGIETAGGVMTVLIKRNTTIPTKQTQTFTTYSDNQPGVLIQVY
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            564 DEDKOKILDKCNEIINWLDKNOTAEKEEPEHQOKELEKVCNPIITKLYQSAGGMPGGMPG
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83.5%; Score 1097.5; DB 3; Length 646;
Best Local Similarity 81.4%; Pred. No. 1e-82;
Matches 214; Conservative 24; Mismatches 20; Indels 5;
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/note= "peptide-binding domain"
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                                                                                                                                                                                                                   Claim 3; Page 42-45; 72pp; Japanese.
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                                  (SUME ) SUMITOMO ELECTRIC IND
99JP-00041535.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       (first entry)
                                                                     Udono H,
                                                                                                         WPI; 2000-543748/49.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Sequence 646 AA;
19-FEB-1999;
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                                                                       Shinbara N,
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 셤
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Human Hsp70 family homologue, Hsc70.

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Pharmaceutical composition, used to treat or prevent infection or cancer, comprises a complex comprising a heat shock protein-binding fragment associated with a molecule displaying antigenicity of an infectious agent
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         384 KSENVÓDLLLLDVTPLSLGIETAGGVMTVLÍKRNTTÍPTKÖTÖTFTTYSDNÓPGVLÍQVY 443
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    EGERAMTKONNLLGRFELSGIPPAPRGVPQIEVTFDIDANGILNVTATDKSTGKANKITI 120
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            EADKKKVLDKCQEVISWLDANTLAEKDEFEHKRKELEQVCNPIISGLYQGAGG-PG--PG 237
                                                                                                                                                                                                                                                                                                                                                                                                                                         The present sequence is that of human heat shock protein (HSP) Hsc70, a constitutive form of a Hsp70 family protein. The invention relates to complexes of peptide-binding fragments of HSPs with antispenic molecules and their use in immunotherapy for the treatment of infectious diseases and cancer. Claimed methods of treating or preventing cancer/infectious disease involve culturing a cancer cell/infected cell transformed with a nucleic acid encoding a HSP peptide-binding domain, recovering complexes of the HSP fragments noncovalently associated with peptides from the cancer cell/infected cell, and administering the recovered complexes. These methods can use Hsc70 peptide-binding fragments complexes. These methods can use Hsc70 peptide-binding fragments comprising amino acids 391-615 and 406-443 of the present sequence, i.e. the peptide-binding core
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        1 KSENVQDLLLLDVAPLSLGLETAGGVMTALIKRNSTIPTKQTQIFTTYSDNQPGVLLQVY
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Length 646;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             83.5%; Score 1097.5; DB 4; Length
81.4%; Pred. No. 1e-82;
ive 24; Mismatches 20; Indels
                                             /note= "peptide-binding core"
                  /note= "beta-helix motif"
                                                                                                                                                                                                                          (UYCO-) UNIV CONNECTICUT HEALTH CENT.
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Claim 48; Fig 1D; 106pp; English
                                                                                                                                                      18-JAN-2001; 2001WO-US001781
                                                                                                                                                                                     20-JAN-2000; 2000US-00488393
. 504
                                .443
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Local Similarity 81.4 nes 214; Conservative
                                406.
                                                                                                                                                                                                                                                                                             WPI; 2001-457506/49
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Sequence 646 AA;
                                                                                                                                                                                                                                                                                                                                                                                    cancer cell.
                                                                                   WO200152791-A2
                                                                                                                                                                                                                                                            Srivastava PK;
                                  Binding-site
                                                                                                                      26-JUL-2001
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Query Match
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 Region
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The invention relates to pharmaceutical compositions comprising peptide

binding fragments of heat shock proteins (HSPs) and non-covalent

complexes of HSP peptide-binding fragments (HBPs) in non-covalent

association with antigenic molecules. Vaccines comprising peptide

fragments of the invention may be used to stimulate an immune response,

fragments of the invention may be used to stimulate an immune response,

crimicular cytocoxic T cell responses against cells infected with

viruses (including hepatitis type A, B and C, influenza, varicella,

adenovirus, herpes simplex (HSV) type I and type II, rinderpest

crimicovirus, papova virus, papilloma virus, respiratory syncytial virus, mumps

virus, papova virus, papilloma virus, arbovirus, cytomegalovirus,

cohinovirus, huntavirus, coxsackie virus, measles virus, rubella virus,

polio virus, HIV-I, and HIV-II; bacteria including (including including Leishmani, Kokzidioa and Trypanosoma) and intracellular

concertioning chelshmani, Kokzidioa and Trypanosoma) and intracellular

concert breast cancers such as human sarcomas and carcinoma, papillary

cancer, breast cancer, ovarian cancer, prostate cancer, squamous cell

cancer, basal cell carcinoma, andencarcinoma, sweat gland carcinoma,

concert and carcinoma, appillary carcinoma,

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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       adenocarcinomas, medullary carcinoma, cystadenocarcinoma, bronchogenic carcinoma, renal cell carcinoma, hepatoma, bile duct carcinoma, choriocarcinoma, seminoma and embryonal carcinoma. The present sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1 KSENVQDLLLLDVAPLSLGLETAGGVMTALIKRNSTIPTKQTQIFTTYSDNQPGVLIQVY
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                                                               Heat shock protein, HSP; HSP peptide-binding fragment; HPBF; vaccine cytotoxic T cell response; hepatitis virus; herpes simplex virus; human immunodeficiency virus; bacteria; Mycobacteria; Rickettsia; proteozoa; Leishmani; Trypanosoma; intracellular parasite; Chlamydia; sarcoma; carcinoma; cancer; human; Hsp70 homologue; Hsc70.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  .,
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/note= "Central core of peptide binding domain"
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                                                                                                                                                                                                                                                                                                            391. .615
/note= "Peptide binding domain"
396. .502
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          is human Hsp70 family homologue, Hec70
                                                                                                                                                                                                                                                                                                                                                              396. .502 /
/note= "P-helix motif"
                                                                                                                                                                                                                                                                                Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Disclosure; Fig 1D; 39pp; English
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Matches 214; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           (SRIV/) SRIVASTAVA P K.
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Best Local Similarity
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                                                                                                                                                                                                                                                                                                            Binding-site
                                                                                                                                                                                                                                                                                                                                                                   Binding-site
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AAE12987 standard; protein; 646 AA.

RESULT 53 AAE12987

(first entry)

28-JAN-2002

AAE12987;

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Amphiphysin; C-NAP-1 and novel protein PN9109 or C-NAP-1 and KIAA1106

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                                                                                                       237
                                                   TNDKGRLSKEEIERMVQEAEKYKAEDEVQRERVSAKNALESYAFNMKSAVEDEGLKGKIS 180
                                                                                                                                                                                                                                                                                                                                                   MAPKAP-K3; AP-3 delta; APP-695; amyloid A4; Hsp8; heat shock protein 8; L130; NY-REN-58; P38 Alpha; P38 Beta; ERK3; KIAA0934; CDK9; cell cycled dependent kinase 9; CLK; C-NR-1; clathrin heavy chain; amphiphysin; PN9109; KIAA1106; neurodegentive disorder; non-insulin dependent diabetes mellitus; NIDDM; Alzheimer's disease; inflammatory disease; rheumatoid arthritis; inflammatory bowel disorder; atherosclerosis; cardiac hypertrophy; hypoxic brain injury; yeast two-hybrid; signal transduction pathway; human; mitogen activated protein kinase.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    New protein complexes comprising protein-protein interactions (e.g. MAPKAP-K3/AP-3 delta or C-NAP-1/Clathrin HC), useful for diagnosing physiological generative disorders or screening drugs for these diseases.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     260. .533
/note= "This region binds the mitogen activated protein
kinase (MAPK) AP-K3 (see ABK13301), the bait protein in
yeast two-hybrid assay, producing a complex claimed in
claim 1"
                                                                TNDKGRLSKEDIERMVQEAEKYKAEDEKQRDKVSSKNSLESYAFNMKATVEDEKLQGKIN
                                                                                                                  EGERAMTKDNNLLGRFELSGIPPAPRGVPQIEVTFDIDANGILNVTATDKSTGKANKITI
               EGERAMTKDNNLLGKFELTGIPPAPRGVPQIEVTFDIDANGILNVSAVDKSTGKENKITI
                                                                                                       EADKKKVLDKCQEVISWLDANTLAEKDEFEHKRKELEQVCNPIISGLYQGAGG-PG--PG
                                                                                                                                                         GF--GAQGPKGGSGSGPTIEEVD 258
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                                                                                                                                                                                                                                                   AAU75102 standard; protein; 646
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   21-JUN-2001; 2001WO-US019762.
                                                                                                                                                                                                                                                                                                                                 Heat shock protein 8 (Hsp8).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      (MYRI-) MYRIAD GENETICS INC.
                                                                                                                                                                                                                                                                                                       (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Heichman K, Bartel PL;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           WPI; 2002-122287/16.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                WO200198524-A2.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Homo sapiens
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                                                                                                                               564
                                                                                                                                                                                  624
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(unknown function) interactions. The protein complexes are useful for diagnosing physiological generative disorders, drug screening for agents that modulate the interaction of the proteins (thus identify drug targets), and identifying additional proteins in the pathway common to the proteins. These physiological disorders include non-insulin dependent dispaces mellituae (NIDDM), neurodegenerative disorders (e.g. Alzheimer's disease), inflammatory diseases (e.g. rheumatoid arthritis and inflammatory bowel disorder) and other human disease such as theroscalerosis, cardiac hypertrophy and hypoxic brain injury. This sequence represents heat shock protein 8 (Hap8) residues 260-533 of which binds to the bait protein MAPKAP-K3 (see ABK13301 for nucleotide signal transduction pathways and forms an interaction claimed in claim 1 of the invention. Note: This sequence does not appear in the specification but has been obtained from a reference given in the
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Munication describes apported to the property formulations of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the 
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Gaps
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ŝ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              83.5%; Score 1097.5; DB 5; Length 646;
81.4%; Pred. No. 1e-82;
ive 24; Mismatches 20; Indels 5;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Human NF-kappaB associated polypeptide sequence #15.
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The invention describes an isolated protein complex, comprising two proteins. The protein complex comprises; protein winnes MAPKAP-K3 and APD-3 adaptor complex delta sub-unit; MAPKAP-K3 and amyloid A4 precursor protein, APP-695; MAPKAP-K3 and heat shock protein (Hsp) 8; leucine rich Lialo and NY-KRN-58; P38 Alpha and P38 Betein kinsse EKK3 and KIAAA0934 (unknown function); EKK3 and cell cycle dependent kinsse (CDK) 9; ERK3 and protein kinsse CLK; C-NAP-1 and Clathrin heavy chain; C-NAP-1

Example 4; Page; 60pp; English.

238 GF--GAQGPKGGSGSGPTIEEVD 258

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The present invention relates to the isolation of human nuclear factor-
kappaB (NR-kappaB) associated polypeptides and polynucleotides. The NR-
kappaB associated polypeptide and polynucleotide sequences are useful for
preventing, treating or ameliorating various disorders including immune
cdisorders, inflammatory disorders, cancers, disorders relating to
aberrant apoptosis, hepatic disorders, Hodgkin's lymphomas,
cd aberrant apoptosis, hepatic disorders, Hodgkin's lymphomas,
cd appalasia, x-linked anhidrotic ectodermal dysplasia, immunodeficiency, al
chappatitis B, hepatitis (e.g. those caused by human
cnontinentia pigmenti, viral infections (e.g. those caused by human
cnontinentia pigmenti, viral infections (e.g. those caused by human
cnottinentia pigmenti, viral infections (e.g. those caused by human
cc immunodeficiency virus (HIV), human T-cell lymphotropic virus (HIV),
contemporal arbitis, inflammatory bowel disease, colitis, asthma,
cr hepatitis B, hepatitis (EAE), autoimmune disorders, disorders related
callergic encephalomyelitis (EAE), autoimmune disorders, disorders for byper immune activity, disorders related to aberrant acute phase
cc hyper immune activity, disorders related to aberrant signal
cc hyper immune activity, disorders related to aberrant signal
cc transduction, hyperproliferative disorders related to aberrant signal
cc transduction, hyperproliferative disorders, diseases of the panoreas
cc disorders (e.g. Huntington's chorea), numer's symptome, bacterial
cinfections, cardiovascular disorders, infertility, psoriasis and
cliffections, cardiovascular sequence represents a human NF-kappaB
cc associated polypeptide of the invention
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                'n.
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Novel NF-kappaB-associated polypeptides and polynuclectides useful for diagnosing, treating and preventing cancer, hepatic disorders, aberrant apoptosis, viral infections, autoimmune disorders, asthma and stroke.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        1 KSENVQDLLLLDVAPLSLGLETAGGVMTALIKRNSTIPTKQTQIFTTYSDNQPGVLIQVY
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Claim 6; Fig 10F; 608pp; English.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         (BRIM ) BRISTOL-MYERS SQUIBB CO.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Nadler S;
                                                                                                                                                                                                                                                                                                                                                                                                                                     26-APR-2001; 2001US-0286645P. 09-JAN-2002; 2002US-0346986P.
                                                                                                                                                                                                                                                                                                                      19-APR-2002; 2002WO-US012636
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        214; Conservative
antiarteriosclerotic.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Carman J, Feder J,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  WPI; 2003-093119/08.
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Best Local Similarity
Matches 214; Conserv
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                N-PSDB; ACA54673
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                                                                                                                                                             WO200286076-A2
                                                                                      Homo sapiens.
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The invention relates to the isolation of novel genes (ACF3446-ACF34559) encoding proteins (ABR64180-ABR64281) involved in the process of angiogenesis. The nucleic acid molecules are useful in identifying and/or obtaining full-length human genes involved in an angiogenic process. The nucleic acid molecule, polypeptides or complexes encoded, cells or the screening of candidate pharmaceutical compounds used in treating angiogenesis-related disorders. They are also useful for diagnosing, prognosticating or treating an angiogenesis-related disorder, which involves uncontrolled or enhanced angiogenesis or is a disorder in which a decreased vasculature is of benefit (e.g. cancer, rhematoid arthritis,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                benefit (e.g. ischemic limb disease or coronary artery disease). The modulator of expression or activity of the polypeptide encoded by the mucleic acid sequence is useful for manufacturing a medicament for the treatment of an angiogenesis-related disorder. This sequence corresponds to one of the novel angiogenic protein
                                                                                                                                                                                                                                                                               antipsoriatic; antiarteriosclerotic; cardiant; vasotropic; anglogenesis; gene therapy; vasculature; cancer; rheumatoid arthritis; psoriasis; diabetic retinopathy; cardiovascular disease; atherosclerosis; ischemic limb disease; coronary artery disease.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          diabetic retinopathy, psoriasis or cardiovascular diseases such as atherosclarosis), or involves inappriately arrested or decreased anglogenesis or is a disorder in which an expanding vasculature is of benefit (e.g. ischemic limb disease or corrections).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   New angiogenic genes and polypeptides, useful for diagnosing, prognosticating or treating an angiogenesis-related disorder, cancer, rheumatoid arthritis, diabetic retinopathy, psoriasis
                                                                                                                                                                                                                                                                 Cytostatic; antirheumatic; antiarthritic; antidiabetic;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Claim 15; SEQ ID NO 159; 90pp; English.
624 GFPGGGAPPSGGASSGPTIEEVD 646
                                                                                                               ABR64224 standard; protein; 646 AA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Vadas MA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 27-SEP-2001; 2001AU-00007973.
27-SEP-2001; 2001AU-00007974.
11-0CT-2001; 2001AU-00008510.
29-OCT-2001; 2001AU-00008532.
13-NOV-2001; 2001AU-00008838.
28-AUG-2002; 2002AU-00951032.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             19-SEP-2002; 2002WO-AU001282
                                                                                                                                                                                                                             Angiogenesis protein BNO128
                                                                                                                                                                                         (first entry)
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Gamble JR, Hahn CN,
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N-PSDB; ACF34499.
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                                                                                                                                                                                                                                                                                                                                                                                       sapiens.
                                                                                                                                                                                         15-0CT-2003
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                                                                                                                                                       ABR64224;
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                                                                             RESULT 56
                                                                                                 ABR6422
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83.5%; Score 1097.5; DB 6; Length 646;

Query Match

623

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BADKKKVILDKCQEVISWLDANTLAEKDEFEHKRKELEQVCNPIISGLYQGAGG-PG--PG 237

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The invention relates to a mammalian cell receptor, useful in the treatment of cancer, which binds to tumour associated lipids and induces anergy or apoptosis in the T cells and antigen presenting cells (APCS). Also included are a mammalian cell useful in the treatment of cancer where the receptor which binds tumour associated lipids and induces cellular inactivation or death is deleted or functionally deactivated, producing (MI) a tumouricidal immunocyte population in vivo in a mammal (by allowing tumour associated lipids to contact immunocytes in which receptors for immunosuppressive fatty acids, ceramides, alycolipids, sphingolipids, glycosphingolipids, phosphosphingolipids, gangliosides, sialylated glycans, lipopeptides and proteoglycolipids are inactivated or
                                                                                                                                                                                                           TNDKGRLSKEDIERMVQEAEKYKAEDEKQRDKVSSKNSLESYAFNMKATVEDEKLQGKIN 563
                                                                                            443
                                                                                                                           EGERAMTKDNNLLGRFELSGIPPAPRGVPQIEVTFDIDANGILNVTATDKSTGKANKITI 120
                                                                                                                                                                                         TNDKGRLSKEEIERMVQEAEKYKAEDEVQRERVSAKWALESYAFNMKSAVEDEGLKGKIS 180
                                                                                                                                                                                                                                                                   BADKKKVLDKCQEVISWLDANTLAEKDEFEHKRKELEQVCNPIISGLYQGAGG-PG--PG 237
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Superantigen; SAg; staphylococcal enterotoxin; tumour; cancer; apoptosis;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             A mammalian cell receptor, useful in the treatment of cancer by binding to tumor associated lipids where the binding induces anergy or apoptosis
                                                                               884 KSENVQDLLLLDVTPLSLGIETAGGVMTVLIKRNTTIPTKQTQTFTTYSDNQPGVLIQVY
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   gene therapy; mammalian cell receptor; cytostatic; tumour associated lipid; anergy; T cell; antigen presenting cell; APC;
                                                                                                                                           1 KSENVQDLLLLDVAPLSLGLETAGGVMTALIKRNSTIPTKQTQIFTTYSDNQPGVLIQVY
                                Gaps
                              5,
Pred. No. 1e-82;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Staphylococcal heat shock protein 70, HSP-70, protein.
        81.4%; Prec. ....
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               cells and antigen presenting cells.
                                                                                                                                                                                                                                                                                                                                                 624 GPPGGAPPSGGASSGPTIEEVD 646
                                                                                                                                                                                                                                                                                                                       GF--GAQGPKGGSGSGPTIEEVD 258
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                                                                                                                                                                                                                                                                                                                                                                                                                                     ABU79083 standard; protein; 646
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     (first entry)
                            Matches 214; Conservative
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T cells and antiq
           Best Local Similarity
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Staphylococcus sp.
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cuerered, a construct userul in the treatment of cancer compirising a superantigen (SAg) nucleotide inserted into a virus, a mammalian T cell superantigen (SAg) nucleotide inserted into a virus, a mammalian T cell activation by tumour associated antigons is deleted or functionally deactivated), a composition useful in the treatment of cancer (comprising a lipid raft conjugated to a superantigen), producing (MZ) atmounricidal immunocyte population ex vivo in a mammal (by allowing tumour associated lipids to context immunocytes, in which creeptors for the lipids are inactivated or deleted to produce a cumourricidal immunocytes population, and administering the tumourricidally activated immunocytes to the host), producing (M3) a tumourricidal APC oppulation ex vivo in a mammal (by allowing a tumour associated lipid to cortext APCs, in which receptors for the tumour associated lipids to context APCs, in which receptors for the tumour associated lipids to and administering APCs to the host), producing a tumour associated lipids to context T cells, in which adaptor proteins, which inhibit T cell activated to produce a tumourricidal population of a cutvation by tumour associated antigens, are deleted or functionally context T cells in which adaptor proteins, which inhibit T cell administering the tumourricidally activated T cells to the host, or allowing a superantigen-lipid raft to context T cells ex vivo, and administering the tumourricidally activated T cells to the host, or allowing a superantigen-lipid raft to context T cells to the host, or allowing a superantigen-lipid raft context T cells to the host, or allowing immunosuppressive tumour associated lipids in vivo), producing (M5) cancer in a mammal (M5) administering in vivo in a mammal (M5) and tumour associated lipids in vivo), producing a tumour associated in vivo in a mammal contract immunosuppressive tumour energy in which inhibit and which tumour associated inputation in vivo in a mammal cour and produced in vivo in a mammal contract in a tumour and prod
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   61 EGERAMIKDNNLLGRFELSGIPPAPRGVPQIEVTFDIDANGILNVTATDKSTGKANKITI 120
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 237
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              443
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   tumour associated antipoputation of the munocytes in which adaptor proteins which inhibit T cell activation by tumour associated antigens are deleted or functionally deactivated) and producing (M7) a tumouricidal T cell population ex vivo in a mammal comprising allowing a superantigen-lipid raft conjugate to contact immunocytes in vivo. The receptors, methods and compositions are useful for treating cancers and tumours. Bacterial superantigens are co-administered or administered as fusion constructs with anti-tumour proteins or motifs. The present or incorporated into a fusion construct with a superantigen. Note: The sequence data for this patent did not form part of the printed
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         9
deleted), a construct useful in the treatment of cancer comprising a
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          specification, but was obtained in electronic format from the US patnet office website at "segdata.uspto.gov/sequence.html?DocID=20020177551"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    TNDKGRLSKEDIERRVOBAEKYKAEDEKORDKVSSKNSLESYAFNWKATVEDEKLQCKIN
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  83.5%; Score 1097.5; DB 6; Length 646; 81.4%; Pred. No. 1e-82; ive 24; Mismatches 20; Indels 5;
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Matches 214; Conservative
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                             SXXXE
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(first entry)

15-JAN-2004

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The invention relates to a novel tumour antigenic peptide or polypeptide comprising a sequence selected from 99 sequences fully defined in the specification. The tumour antigenic peptide or polypeptide comprises a sequence selected from 99 sequences fully defined in the specification, where the tumour antigenic peptide preferably has a sequence of Glu-Properted-Lan-Ser-Gln-Glu-Hra-Phe, and the polypeptide preferably has a sequence comprising amino acids fully defined in the specification. The invention further provides a cancer vaccine comprising a tumour antigenic peptide, polypeptide, which has eyfostatic activity. A tumour antigenic peptide, polypeptide, its encoding polymuclectide, a net peptide, a recombinant vector containing the useful for screening for compounds that interact with the tumour antigenic peptide, the polypeptide or its encoding polymuclectide and increases the expression of the tumour antigenic peptide, the polypeptide or its encoding polymuclectide is useful for inducing cycloxic 7 cells the tumour antigenic peptide is useful for treating cancer such as colon, mouth, lung, containing the containing the useful for treating cancer such as colon, mouth, lung, containing the containing cancer such as colon, mouth, lung, containing the containing cancer such as colon, mouth, lung, containing cancer such as colon, mouth, lung, cancer is a sequence of cancer and cancer cancer cancer cancer cancer cancer cancer cancer cancer cancer cancer cancer cancer cancer cancer cancer cancer cancer cancer cancer cancer cancer cancer cancer cancer cancer cancer cancer cancer cancer cancer cancer cancer cancer cancer cancer cancer cancer cancer cancer cancer cancer cancer cancer cancer cancer cancer cancer cancer cancer cancer cancer cancer cancer cancer cancer cancer cancer cancer cancer cancer cancer cancer cancer cancer cancer cancer cancer cancer cancer cancer cancer cancer cancer cancer cancer cancer cancer cancer cancer cancer cancer cancer cancer cancer cancer cancer cancer cancer cancer cancer cancer c
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                                                                tumour antigenic peptide, cancer, vaccine, cytostatic, cytotoxic T cell, colon, mouth, lung, prostatic, gynecological, human.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         prostatic or gynecological cancer. The invention also provides a pharmaceutical composition useful for treating cancer. The tumour antigenic peptide or the polypeptide is useful as an antigen to create antibodies. This sequence represents one of the tumour antigenic
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      1 KSENVQDLLLLDVAPLSLGLETAGGVMTALIKRNSTIPTKQTQIFTTYSDNQPGVLIQVY
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Novel tumor antigenic peptide or polypeptide useful for inducing cytotoxic T cells or for treating cancer such as colon, mouth, lung, prostatic or gynecological cancer.
                      HLA-B46 T cell recognised tumour antigenic polypeptide, SEQ No
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        83.5%; Score 1097.5; DB 7; Length
81.4%; Pred. No. 1e-82;
ive 24; Mismatches 20; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Claim 2; SEQ ID NO 52; 98pp; Japanese
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                                                                                                                                                                                                                                                                                                                                                                        25-JUN-2001; 2001JP-00191974.
                                                                                                                                                                                                                                                                                                                24-JUN-2002; 2002JP-00183603.
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Matches 214; Conserv
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                                                                                                                                                         Homo sapiens
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TNDKGRLSKEBIBRMVQBABKYKAEDEVQRERVSAKNALESYAFNMKSAVEDEGLKGKIS 180
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                                                                                                                                                                                                                                                                                                                                                                                                                                               New receptor in a mammalian cell that inhibits regular activation by receptors specific for lipid-based tumor associated antigens, useful for treating a neoplastic disease or tumor, and infectious diseases.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             The invention describes a receptor in a mammalian cell that inhibits regular activation by receptors specific for lipid-based tumour associated antigen. The receptor has cytostatic and antimicrobial properties and is suitable for use in gene therapy. The receptors, methods and compositions are useful for treating a neoplastic disease tumour (cancer), and infectious diseases. This sequence represents a protein associated with superantigens used to generate antitumour
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    1 KSENVQDLLLLDVAPLSLGLETAGGVMTALIKRNSTIPTKQTQIFTTYSDNQPGVLIQVY
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Gaps
                                                                                                                                                                                  receptor; lipid-based tumour associated antigen; cytostatic; antimicrobial; gene therapy; neoplastic disease; tumour; cancer;
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24; Mismatches 20;
                                                                                                                                                          Superantigen associated protein seq id 43.
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624 GFPGGGAPPSGGASSGPTIEEVD 646
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                                                                                ADF43323 standard; protein; 646
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                                                                                                                                                                                 receptor; lipid-based
                                                                                                                                                                                                                                                                                                                                                                                                                            WPI; 2003-787326/74.
                                                                                                                                   (first
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ses 214; Conserv
                                                                                                                                                                                                                infectious disease.
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                                                                                                                                                                                                                                                                                                                                                28-DEC-1999;
                                                                                                                                                                                                                                         Unidentified
                                                                                                                                   12-FEB-2004
                                                                                                                                                                                                                                                                                             21-AUG-2003
                                                                                                                                                                                                                                                                                                                                                                                                   Terman DS;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               immunity.
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                                                                                                         ADF43323;
                                                     RESULT 59
ADF43323
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       The present invention relates to a peptide comprising a sequence of at least 8 contiguous amino acids, having at least 65 % identity to a portion inducible heat shock protein (Hsp) -70 sequence, differing from a sequence of constitutive heat shock protein Hsc70 by at least one amino acid, and capable of inducing cytotoxic T lymphocytes that specifically Trecognize cells naturally producing inducible Hsp70, in vitro or in vivo. The peptides are stable, and has high affainty for human leukocyte antigen (HLA) class I molecules. The present sequence represents Hsc 70.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               443
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    EADKKKVLDKCQEVISWLDANTLAEKDEPEHKRKELEQVCNPIISGLYQGAGG-PG--PG 237
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                                                                                                                                                                                                                  inducible heat shock protein; Hsp70; constitutive heat shock protein;
Hsc70; human leukocyte antigen; HLA.
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81.4%; Pred. No. 1e-82;
ive 24; Mismatches 20; Indels
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                                                                                                                                                                                                                                                                                                                                                                                                                                 (IDMI-) IDM IMMUNO-DESIGNED MOLECULES.
(INSR ) INST ROUSSY GUSTAVE.
(INRM ) INSERM.
 624 GPPGGGAPPSGGASSGPTIEEVD 646
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                                                                                                                                                                                                                                                                                                                                                                      26-SEP-2002; 2002WO-EP010821.
                                                                                                                                                                                                                                                                                                                                                                                                     27-SEP-2001; 2001EP-00402496.
                                                                                ADI20103 standard; protein;
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                                                                                                                                                  (first entry)
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Kosmatopoulos
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                                                                                                                                                                                                                                                                                                      WO2003029288-A2.
                                                                                                                                                                                                                                                                     Unidentified
                                                                                                                                                                                                                                                                                                                                   10-APR-2003.
                                                                                                                                                22-APR-2004
                                                                                                                 ADI20103;
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This invention relates to novel mitochondrial targets that can be used afor therapeutic intervention in treating a disease associated with altered mitochondrial function. Specifically, it refers to a method for identifying proteins of the human heart mitochondrial proteome that are useful for drug screening assays, as well as therapeutic targets. The present invention describes a method for identifying such proteins that can be used in the treatment of various diseases associated with altered mitochondrial function including diabetes mellitus, Huntington's disease, osteoarthritis, Leber's hereditary optic neuropathy (LHON), mitochondrial encephalopathy lactic acidosis and stroke (MELAS), mycolonic epilepsy ragged red fibre syndrome (MERR) or cancer. Accordingly, these compositions have neuroprotective, nootropic, antidiabetic,
                                                                                                                                                                                                                                                    Leber's hereditary optic neuropathy; LHON; and stroke; MELAS; mitochondrial encephalopathy lactic acidosis and stroke; MELAS; myoclonic epilepsy ragged red fibre syndrome; MERRF; cancer; neuroprotective; noctropic; antidiabetic; anticonvulsant; antiarthritic;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Identifying a mitochondrial target for drug screening assays and for treating diseases associated with altered mitochondrial function, comprises detecting a modified polypeptide in a sample and correlating
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Gaps
                                                                                                                                                                                    Human heat mitochondrial protein as a therapeutic target SeqID703.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           anticonvulsant, antiarthritic, osteopathic, ophthalmological and cytostatic activities. This polypeptide sequence is a human heart mitochondrial protein of the invention.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Glenn GM;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   SW,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Taylor
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                                                                                                                                                                                                                                                                                                                         osteopathic; ophthalmological; cytostatic
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624 GFPGGGAPPSGGASSGPTIEEVD 646
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                                                                               ADJ68897 standard; protein; 646
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17-JUN-2002; 2002US-0389987P.
20-SBP-2002; 2002US-0412418P.
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214; Conservative 2
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                                                                                                                                                                                                                                      Huntington's disease;
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Best Local Similarity
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                                                                                                                                                                                                                                                                                                                                                             Homo sapiens.
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DE;
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                                                                                                                   ADJ68897;
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384 KSENVODLLLLDVIPLSLGIETAGGVMTVLIKRNITIPIKQTQTFITYSDNQPGVLIQVY 443

1 KSENVQDLLLLDVAPLSLGLETAGGVMTALIKRNSTIPTKQTQIFTTYSDNQPGVLIQVY

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liver disorder
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Composition comprising several cDNAs that are differentially expressed in treated human C3A liver cell cultures, useful for treating liver
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                           TNDKGRLSKEETERMVQEAEKYKAEDEVQRERVSAKNALESYAFNMKSAVEDEGLKGKIS 180
                                                                              EADKKKVLDKCQEVISWLDANTLAEKDEFEHKRKELEQVCNPIISGLYQGAGG-PG--PG 237
                                                                                                                                                                                                                                                                                                                                                                     human; liver disorder; hyperlipidaemia; hypertension; type II diabetes; tumour; liver; inflammatory disorder; immune response disorder; high-throughput screening; differential gene expression; gene therapy.
                                                                                                                                                                                                                                                                                                                                             Human protein expressed in a liver disorder #3.
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             WI;
                                                                                                                                                                                                                                                                                                  384 KSENVÓDLLILDVTPLSLGIETAGGVMTVLIKRNTTIPTKOTOTFTTYSDNOPGVLIQVY
                                                                                                                                                                                                                       1 KSENVQDLILLDVAPLSLGLETAGGVMTALIKRNSTIPTKQTQIFTTYSDNQPGVLIQVY
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                                                                         Gaps
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                                    646;
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                                  Length
                                    83.5%; Score 1097.5; DB 8; Length
81.4%; Pred. No. 1e-82;
ive 24; Mismatches 20; Indels
                                  DB 8;
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                                                            Best Local Similarity Vermatches 214; Conservative
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N-PSDB; ADN04483.
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                                    Query Match
Best Local Similarity
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Sequence 646 AA;
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Wu TD;
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WPI; 2004-544089/
N-PSDB; ADQ89811
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Detecting multidrug resistance/multidrug resistance potential in test
neoplastic cell, by measuring heat shock cognate 70 protein level in test
cell, comparing level of protein expression in test cell and non-
                                                                                                                                                                                       120
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                                                  Gaps
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                                               .,
    Length 646;
Query Match 83.5%; Score 1097.5; DB 8; Length Best Local Similarity 81.4%; Pred. No. 1e-82; Matches 214; Conservative 24; Mismatches 20; Indels
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               resistance in a test neoplastic cell by measuring the level of cell surface-expressed HSC70 protein. The neoplastic cell is especially a breast cancer, ovarian cancer, mysloma, melanoma, sarcoma, leukaemia, retinoblastoma, hepstoma, glioma, mesothalioma or carcinoma cancer cell, or from a tissue selected from blood, bone marrow, spleen, lymph node, liver, thymus, kidney, brain, skin, gastrointestinal tract, eye, breast, prostate and ovary. The invention also provides a cell surface HSC70-targeted agent for treatment or prevention of an MDR neoplasm. This may include an HSC70 binding component and a therapeutic component such as a chemotherapeutic agent or radioisotope. Vaccines for treating or preventing MDR neoplasms comprise a HSC70 polypeptide or, in the case of DNA vaccines, a nucleic acid sequence encoding HSC70.
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                                                                                                                                                                                                                                                                                                                                   Length
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06-MAY-2003; 2003US-0468402P
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N-PSDB; ADQ89797

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                                                                     The present invention relates to a polynucleotide for preventing, treating or diagnosing a disease in an individual. The composition or the polypeptide, polynucleotide or RNA precursor, or antibody is useful for diagnosing, preventing or treating diseases (e.g. cell proliferative diseases such as cancer) in an individual. These may also be used for identifying substances capable of binding to or modulating the function of the polypeptide, capable of inhibiting the function of the corresponding gene, or capable of inhibiting the cell division cycle or cell cycle progression, preferably mitosis and/or meiosis. The present sequence represents an antagonist of cell cycle progression protein
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cancer) or for identifying modulators
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                                                                                                                                                                                                                                                                              83.5%; Score 1097.5; DB 8; Length
81.4%; Pred. No. 1e-82;
ive 24; Mismatches 20; Indels
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                                           242; 461pp; English
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06-MAY-2003; 2003US-0468402P
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Matches 214; Conservative
proliferative diseases mitosis or meiosis.
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                                             2; SEQ ID NO
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        human; PRO; immune related disease; inflammatory immune response; immune response stimulation; antiallergic; antianaemic; antiarthritic; antiasthmatic; antidiabetic; antiinflammatory; antipsoritatic; antithyroid; CNS; dermatological; gastrointestinal; haemostatic; hepatotropic; immunostimulant; immunosuppressive; muscular; nephrotropic; neuroprotective; osteopathic; respiratory; vasotropic;
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                                 cycle
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                             New cell cycle progression genes and proteins for modulating cell cyciprogression in cells, for preventing, treating or diagnosing cell proliferative diseases (e.g. cancer) or for identifying modulators of
                                                                                                                                                                                                                                                                                                                                                                                                                       Gaps
                            cell
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                                                                                                                                                                                                                                                                                                                                                                        Human PRO protein sequence SEQ ID NO:884.
                                                                                                                 Claim 2; SEQ ID NO 228; 461pp; English
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         624 GPPGGGAPPSGGASSGPTIEEVD 646
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Best Local Similarity 81.4'
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                                                                                    mitosis or meiosis.
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RESULT 68

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The present invention describes an isolated PRO nucleic acid (I). Also described: (1) a vector comprising (I); (2) a host cell comprising the vector of (1); (3) a process for producing a PRO polypeptides; (4) an isolated PRO polypeptide; (5) a chimeric molecule comprising the polypeptide of (4) fused to a heterologous amino acid sequence; (6) an antibody which specifically binds to a polypeptide of (4); (7) a composition of matter comprising a polypeptide of (4); (7) a agonist or antagonist of the polypeptide or an antibody that binds to the polypeptide or an antibody that binds to the polypeptide or an antibody that binds to the polypeptide or an antibody that binds to the polypeptide or an antibody that binds to the matter of (7); (9) a method of treating an immune related disease in a mammal; (10) a method for determining the presence of a PRO polypeptide or an antibody that inhibits or in a sample suspected of having the polypeptide; (11) a method of identifying a compound that inhibits or in a mammal; (12) a method of stimulating the inflammatory immune response in a mammal; (12) a method of stimulating the immune response in a mammal. The process thave antiallarycic, antianaemic, antiabratic, antidiabetic, antianaemic, antiabratic, antidiabetic, antianaemic, antiabratic, antidiabetic, antianaemic, antiabratic, antiabratic, antianaemic, and can be used in gene therapy. The nucleic acid (1) and the encoded polypeptides, compositions, kits and methods are useful in diagnosing and treating an immune related disease and in summane related disease and in mammal response. The present sequence represents a human
                                                                                                                                                                                                                                                             New PRO polynucleotides and polypeptides, useful in useful in diagnosing and treating an immune related disease, e.g. systemic lupus erythematosus, rheumatoid arthritis, diabetes mellitus or asthma and in stimulating an immune response.
                                                                                                                  Gurney AL, Schoenfeld J, Williams PM;
                                                                                                                                                                                                                                                                                                                                                                                  Claim 1; SEQ ID NO 884; 3009pp; English.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 PRO protein from the present invention.
                        29-OCT-2002; 20,02US-0422472P.
                                                                                                                  S, Clark H,
Wu TD;
                                                                     (GETH ) GENENTECH INC
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Wood WI,
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Sequence 646 AA;

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                                                                                                                                                                                EGERAMTKDNNLLGRFELSGIPPAPRGVPQIEVTFDIDANGILMVTATDKSTGKANKITI 120
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                                                                                KSENVQDLLLLDVTPLSLGIETAGGVMTVLIKRNTTIPTKQTQTFTTYSDNQPGVLIQVY
                                                                                                                            KSENVQDLLLLDVAPLSLGLETAGGVMTALIKRNSTIPTKQTQIFTTYSDNQPGVLIQVY
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83.5%; Score 1097.5; DB 8; Length 646; 81.4%; Pred. No. 1e-82; '.ive 24; Mismatches 20; Indels '5;
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 Query Match
Best Local Similarity 81.4%;
Matches 214; Conservative 2
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Query Match

83.5%; Score 1097.5; DB 8; Length 646;
Best Local Similarity 81.4%; Pred. No. 1e-82;
Matches 214; Conservative 24; Mismatches 20; Indels 5;

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polypepture is useful for treating an immune featere missure properties to use use the useful for the properties is a spondyloarthritis, osteoarthritis, invenile chronic arthritis, a spondyloarthropathy, systemic sclerosis, an idiopathic inflammatory wyopathy, Signer's syndrome, systemic sclerosis, autoimmune haemolytic anaemia, autoimmune thrombocytopenia, thyroiditis, diabetes mellitus, immune-mediated renal disease, a demyelinating disease of the central or peripheral nervous a chronic inflammatory demyelinating polyneuropathy, dialilain-Barre syndrome, a chronic inflammatory demyelinating polyneuropathy, a hepatobiliary disease, infectious or autoimmune chronic active hepatitis, primmary biliary cirrhosis, granulomatous hepatitis, sclerosing cholangitis, inflammatory bowel disease, gluten-sensitive enteropathy, Whipple's disease, autoimmune or immune-mediated skin disease, a bullous skin disease, erythema multiforme, contact dermatitis, psoriasis, an allergic disease, asthma, allergic rhinitis, atopic dermatitis, food hypersensitivity, urricaria, an immunologic disease of the lung, cosinophilic pneumonia, idiopathic pulmonary fibrosis, hypersensitivity pneumonia, idiopathic pulmonary fibrosis, hypersensitivity pneumonia, idiopathic pulmonary fibrosis, hypersensitivity pneumonia, idiopathic pulmonary fibrosis, hypersensitivity pneumonia, idiopathic pulmonary fibrosis, hypersensitivity pneumonia, idiopathic pulmonary fibrosis, hypersensitivity pneumonia, idiopathic pulmonary fibrosis, hypersensitivity pneumonia, idiopathic pulmonary expresents appropriate or presents appropriate or preparents appropriate or preparents appropriate or preparents expresents appropriate or preparents appropriate appropriate or preparents appropriate appropriate appropriate appropriate appropriate appropriate appropriate appropriate appropriate appropriate appropriate appropriate appropriate appropriate
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           New PRO polypeptides and polynucleotides, useful for treating e.g. erythematosus, rheumatoid arthritis, diabetes mellitus, immune-mediated renal disease, or demyelinating diseases of the central or peripheral
                                                                                                                                                                                                                                                       PRO; antiinflammatory; antiarthritic; antirheumatic; immunosuppressive; osteopathic; antidiabetic; dermatological; antipsoriatic; antiallergic; antiasthmatic; hepatotropic; respiratory; gene therapy; immune system.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    invention relates to a novel isolated nucleic acid and the PRO
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Van Lookeren M, Williams PM, Wood WI;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Claim 7; SEQ ID NO 1298; 2940pp; English.
                     ADP24120 standard; protein; 646 AA.
                                                                                                                                                                                             PRO polypeptide SEQ ID NO:1298.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          30-OCT-2003; 2003WO-US034312.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 01-NOV-2002; 2002US-0423394P.
                                                                                                                                      18-NOV-2004 (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Clark H, Schoenfeld J,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           (GETH ) GENENTECH INC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        WPI; 2004-419628/39.
N-PSDB; ADP24119.
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                                                                                                                                                                                                                                                                                                                                                                                                                                      WO2004041170-A2.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      nervous system.
                                                                                                                                                                                                                                                                                                                                                                            Unidentified.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             21-MAY-2004.
                                                                               ADP24120;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Wu TD;
ADP24120
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substances comprises incubating a test compound with a cell, and/or
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              유
                                                                                                                                                                                                                                                                                                                                                                  pain regulation; screening; LuzP; PEP-19; phosphatidylinositol synthase; valosin; interleukin 6 receptor subunit beta; aspartate aminotransferase; neuronal immediate early gene; heat shock protein 2; HSC70; calmodulin; bamacan; leukotriene A4 hydrolase; chondromodulin 1; Mss4/phosphatidylinositol-4-phosphate 5 kinase; 26S proteasome UE p112; UE z; UE p44.5; ingensin; 3-hydroxy-3-methylgluaryl-Co A synthase; protein phosphatase EF hands-1; RAB21; TNF receptor-associated factor 6-binding protein; spaghetti protein; microtubuli-associated factor 6-binding protein; spaghetti protein; microtubuli-associated protein 4; CDC10;
                                                120
                                                                       503
                        443
                                                                                             TNDKGRLSKEEIERMVQEAEKYKAEDEVQRERVSAKNALESYAFNMKSAVEDEGLKGKIS 180
                                                                                                                                             EADKKKVLDKCQEVISWLDANTLAEKDEFEHKRKELEQVCNPIISGLYQGAGG-PG--PG 237
                                                                                                                                                                   623
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                , polynucleotides and polypeptides involved in pain regulation, useful screening for pain-regulating compounds for therapy and diagnosis.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           involved
                384 KSENVQDLLLLDVTPLSLGIETAGGVMTVLIKRNTTIPTKQTQTFTTYSDNQPGVLIQVY
                                                              DEDKOKILDKCNEIINWLDKNOTAEKEEFEHQOKELEKVCNPIITKLYQSAGGMPGGMPG
                                                EGERAMTKDNNLLGRFELSG1PPAPRGVPQ1EVTFD1DANG1LNVTATDKSTGKANK1T1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ranscription co-activator CRSPIS, JERKY, SOUL protein;
rRNA intron-encoded homing endonuclease;
epithelial cell growth inhibitor; glutathione transferase A4; CGI-69;
differential display; chronic pain; gene therapy.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          This invention describes novel polynucleotides and polypeptides invoin pain regulation which are useful in screening for pain-regulating compounds for therapy and diagnosis. Identifying pain-regulating
                                                                                                                                                                                                         GF -- GAQGPKGGSGSGPTIEEVD 258
                                                                                                                                                                                                                                                                             ADT66611 standard; protein; 646 AA.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Schaefer MK;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Claim 1; Fig 27b; 241pp; German.
                                                                                                                                                                                                                                                                                                                                                  Human chaperone Hsc70 protein.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          05-FEB-2003; 2003DE-01004680.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   32-DEC-2003; 2003WO-EP013597
                                                                                                                                                                                                                                                                                                                           (first entry)
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  (CHEF ) GRUENENTHAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               WPI; 2004-604492/58.
N-PSDB; ADT66610.
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cuberances computates intrumaciang a test Compound with a cell, that synthesises at least one specific peptide or profesin, then measuring either binding of test compound to the protein or a functional parameter that is altered by the binding. The protein or a functional parameter that is altered by the binding. The protein or a functional parameter that is altered by the binding. The protein or containing protein, interleukin 6 receptor subunit beta, aspartate containing protein, interleukin 6 receptor subunit beta, aspartate sainortansferase, neuronal immediate early gene, heat shock protein 27, HSC70, calmodulin, syntaxin binding protein 1, spliceosomal protein 3AP (15, neurodap 1, bamacan, leukoriene A4 hydrolase, chondromodulin 1 SAP (15, neurodap 1, bamacan, leukoriene A4 hydrolase, chondromodulin 1 CC MSS4/phosphatidylinositol-4-phosphate 5 kinase, 265 proteasome UE pl12 or UE Z or UE P44.5, ingensin, 3-hydroxy-3-methylgluaryl-Co A synthase, chospholycerate kinase, RNA polymerase II TF SIII pl8 UE, protein 1 protein, ortholog of the Drosophila gene 'spaghetti', protein with 4-cc protein, ortholog of the Drosophila gene 'spaghetti', protein with 4-cc alnexin -t, sorting nexin 3, glia-derived nexin precursor, microtubulic associated protein 4, to CC 10, transcription co-activator CRSPISO, JUBKY, CXM-209528, TF SOXIO, SOUL protein, rRNA intron-encoded homing endounclease, epithelial cell growth inhibitor, glutathione transferase (16) The specified nucleic acids and proteins and proteins and identified using the restriction fragment differential display PCR method (Biochem. Biophys. Res. Commun., 234 (1997) 16), applied to rats in which compute identified by the new method, also specified polymucleotides, their antisense sequences, encoded proteins and proteins addinance and calls, are useful as therapeuric and againstic agents.

CC protein.

CC protein.
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          563
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          237
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              EGERAMTKDINLLGRFELSGI PPAPRGVPQI EVTFDI DANGI LINVTATDKSTGKANKI TI
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          181 EADKKKVLDKCQEVISWLDANTLAEKDEFEHKRKELEQVCNPIISGLYQGAGG-PG--PG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1 KSENVQDLLLLDVAPLSLGLETAGGVMTALIKRNSTIPTKQTQIFTTYSDNQPGVLIQVY
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Query Match 83.5%; Score 1097.5; DB %; Length Best Local Similarity 81.4%; Pred. No. 1e-82; Matches 214; Conservative 24; Mismatches 20; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       GFP-HSC70 fusion protein, SEQ ID NO:174.
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Sequence 646 AA;
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10-JAN-2001
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Automated cell-based characterization of toxin by contacting cells containing luminescent reporter molecules with test substance and
                                                                                                                               Example 11; Page 315-318; 336pp; English.
                                                  99US-0122152P.
99US-0123399P.
99US-00352171.
                                        25-FEB-2000; 2000WO-US004794
                                                                                  Kapur R;
                                                                       (CETT-) CETTOWICS INC
                                                                                           WPI; 2000-594086/56.
                                                                                                                     analyzing optically.
Aequorea victoria.
Mammalia.
                                                                                                N-PSDB; AAA93443
                    WO200050872-A2
                                                                                 Giuliano KA,
                                                  26-FEB-1999;
08-MAR-1999;
                                                            12-JUL-1999;
                               31-AUG-2000
           Chimeric.
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The inversion relates to systems, methods and reagents for cell-based screening or detection of compounds which affect particular biological functions. The methods of the invention utilise fluorescent biodecector calcelular distribution of at least the fluorescent cause an alteration in the cellular distribution of at least the fluorescent cause an alteration in the cellular distribution of at least the fluorescent proteins (HSPS) fused to a fluorescent protein (e.g., jellyfish green fluorescent protein (GPP), or derivatives thereof). Such biosensors are located in the cytoplasm, but on stress activation translocate to the nucleus. In another embodiment biodetector proteins can be used to detect protease activity. Such protease biodetector fusion proteins comprise one or more fluorescent proteins, a recognition signal which is cleaved by the protease; and at least one cellular localisation signal. The latter two components may be from heterologous sources. Due to the localisation signal, the biodetector protein is localised to a particular region of the cell. Once acted on by the protease of interest, the fluorescent protein is cleaved from the localisation sequence, and is free to migrate to other locations within the cell. The presence of a second localisation signal attached to the fluorescent protein enables the fluorescent protein to be directed to a different cellular compartment after cleavage of the protease recognition rem be detected to the biosensors of the invention can be detected to investigate a wide range of activities and to screen componence of spatial resolution. The methods and biosensors of the invention of help with a high degree of spatial resolution. The methods and biosensors of the invention of help with a might degree of spatial resolution. The methods of protein collular proprietions containing methods with a high degree of spatial resolution. The methods of protein containing methods with a high degree of spatial resolution. The methods of the protease of the protease of patial reso extraction, data analysis and automation, resulting in increased quantity and speed of data collection and faster evaluation of drug candidates. Sequences AAB22860-B22876 and AAB22936-B22941 represent biosensor fusion proteins produced in an exemplification of the invention. (Updated on 12-SEP-2003 to standardise OS field) activities. Biosensors containing a recognition site for caspase, for example, may be used for the screening of compounds which modulate apoptosis, while biosensors containing other protease recognition sites may be used for the detection of proteolytic toxins (such as anthrax lethal factor). The method provides improved target validation and candidate compound optimisation by combining many cell screening formats with fluorescence-based molecular reagents and computer-based feature invention relates to systems, methods and reagents for cell-based

Sequence 890 AA;

Gaps 5 Length 890; tch 83.5%; Score 1097.5; DB 3; Length al Similarity 81.4%; Pred. No. 1.6e-82; 214; Conservative 24; Mismatches 20; Indels Query Match Best Local Similarity Matches

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The invention describes methods of automated detection, classification and identification comprising treating cells containing luminescent reporter molecules (I) in array of locations with a test substance, where (I) are detectors, classifiers or identifiers, imaging cells in each location to obtain luminescent signals and converting optical information into digital data to interpret presence of toxins in the test substance.
                                                                                                                                                237
120
                                                                    747
                                                                                           TNDKGRLSKEEIERMVQEAEKYKAEDEVQRERVSAKNALESYAFNMKSAVEDEGLKGKIS 180
                                                                                                            TNDKGRLSKEDIERMVQEAEKYKAEDEKQRDKVSSKNSLESYAFNMKATVEDEKLQGKIN 807
                                                                                                                                                          EADKKKVLDKCQEVISWLDANTLAEKDEFEHKRKELEQVCNPIISGLYQGAGG-PG--PG
                                          EGERAMTKDNNLLGRFELSGI PPAPRGVPQI EVTFDI DANGI LNVTATDKSTGKANKI TI
                                                        Detection, classification, identification, toxin detection, protease, ADP-ribosylating toxin, cytotoxic phospholipase, exfoliative toxin,
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Automated cell-based toxin detection, classification, and/or identification by treating cells involves use of three classes of luminescent reporter molecules such as detectors, classifiers or
                                                                                                                                                                                                                                                                                                                                                                          Protease biosensor related biosensor #3.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Example 11; Col 291-296; 214pp; English.
                                                                                                                                                                                                                            868 GFPGGGAPPSGGASSGPTIEEVD 890
                                                                                                                                                                                                                                                                                           ABG94501 standard; protein; 890 AA.
                                                                                                                                                                                                  GF -- GAQGPKGGSGSGPTIEEVD
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98US-01031271.
99US-0122152P.
99US-013339P.
99US-0151797P.
99US-00430656.
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                                                                                                                                                                                                                                                                                                                                                27-NOV-2002 (first entry)
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                                                                                                                                                                                                                                                                                                                                                                                                                               toxic threat agent
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26-FEB-1999
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                                                                                                                                                                                                                                                                                                                                                                                                                                                      Synthetic.
                                                                                                                                                                                                                                                                                                                       ABG94501;
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                                                                                                                                                                                                                                                                   RESULT 71
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ribosylating toxins, cytotoxic phospholipases, and exfoliative toxins. Three classes of cell-based luminescent reporter molecules such as detectors, classifiers and identifiers are described and serve as reporters of toxic threat agents. The first two levels of characterisation ensure a rapid readout of toxin class without sacrificing the ability to detect many new mutant toxins or dissect several complex mixtures of known toxins. This is the amino acid sequence of a biosensor associated with the protease blosensor of the invention
                                                                                                                                                                                                                                                               687
                                                                                                                                                                                                                                                                                             120
                                                                                                                                                                                                                                                                                                                                                                                                              237
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Otsuki T, Wakamatsu A, Sato H, Ishii S;
iio Y, Otsuka K, Nagai K, Irie R, Tamechika I;
btsuka M, Nagahari K, Masuho Y;
                                                                                                                                                                                                                                                                                                              TNDKGRLSKEEIERMVQEAEKYKAEDEVQRERVSAKNALESYAFNMKSAVEDEGLKGKIS 180
                                                                                                                                                                                                                                                                                                                                                                   9
                                                                                                                                                                                                                                                    KSENVQDLLLLDVTPLSLGIETAGGVMTVLIKRNTTIPTKQTQTFTTYSDNQPGVLIQVY
                                                                                                                                                                                                                                                                                             EGERAMIKDNNLLGRFELSGI PPAPRGVPQI EVTFDI DANGI LNVTATDKSTGKANKI TI
                                                                                                                                                                                                                                                                                                                                                                                                              EADKKKVLDKCQEVISWLDANTLAEKDEFEHKRKELEQVCNPIISGLYQGAGG-PG--PG
                                                                                                                                                                                                                                    KSENVQDLLLLDVAPLSLGLETAGGVMTALIKRNSTIPTKQTQIPTTYSDNQPGVLIQVY
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  New polynucleotides and polypeptides are useful in gene therapy, for developing a diagnostic marker or medicines for regulating their expression and activity, or as a target of gene therapy.
are useful for detection of toxins chosen from proteases,
                                                                                                                                                                                                        Gaps
                                                                                                                                                                                                       S
                                                                                                                                                                           Length 890;
                                                                                                                                                                          / Match 83.5%; Score 1097.5; DB 5; Length Local Similarity 81.4%; Pred. No. 1.6e-82; hes 214; Conservative 24; Mismatches 20; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           human; gene therapy; diagnostic marker; pharmaceutical
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Human protein of the invention SEQ ID NO:4141
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Claim 1; SEQ ID NO 4141; 305pp; English
                                                                                                                                                                                                                                                                                                                                                                                                                                                                        GF -- GAQGPKGGSGSGPTIEEVD 258
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Otsuka M,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ADM05456 standard; protein; 250
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     (REAS-) RES ASSOC BIOTECHNOLOGY.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          22-MAR-2002; 2002JP-00137785.
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               r, Sugiyama T, J, Isono Y, F
Yoshikawa T, C
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         WPI; 2003-723558/69.
N-PSDB; ADM03013.
                                                                                                                                                Sequence 890 AA;
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Seki N,
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Matches
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                                                                                                                                                                                                                                                                                                                                                                         98 TATDKSTGKANKITITNDKGRLSKEEIERWVQEAEKYKAEDEVQRERVSAKNALESYAFN 157
                                                                                                                                                                                                                                                                                                                                                                                                                 225
                                                                                                                                                                                                                                                                                                                                                                                                                                  The invention relates to a novel human polynucleotide and the encoded polypeptide. A polynucleotide of the invention may have a use in gene therapy. An oligonucleotide of the invention ADM06202-ADM06773 is useful as a primer for synthesizing the polynucleotide or as a probe for detecting the polynucleotide. The polynucleotides ADM01316-ADM03758 are useful in gene therapy, for developing a diagnostic marker or medicines for regulating their expression and activity, or as a target of gene therapy. The proteins ADM03759-ADM06201 encoded by the polynucleotides are useful as pharmaceutical agents. The present sequence represents a protein sequence of the invention.
                                                                                                                                                                                                                                                                                                                    97
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Determination of difference in expression level of specified genes in inflamed and non-inflamed skin sites for diagnosis and examination of atopic dermatitis and psoriasis.
                                                                                                                                                                                                                                                                                      46 TTYSDNQPGVLIQVYEGERAMTKDNNLLGRFELSGIPPAPRGVPQIEVTFDIDANGILNV
                                                                                                                                                                                                                                                                                                        38 TTYSDNQPGVLIQVYEGERAMTKONNLLGRFELSGIPPAPRGVPQIEVTFDIDANGILNV
                                                                                                                                                                                                                                                                                                                                                    106 TATDKSTGKANKITITNDKGRLSKEEIERMVQEAEKYKAEDEVQRERVSAKNALESYAFN
                                                                                                                                                                                                                                                                                                                                                                                                                 MKSAVEDEGLKGKI SEADKKKVLDKCQEVISWLDANTLAEKDEFEHKRKELEQVCNPIIS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     atopic dermatitis; gene expression level; skin; inflammation; rash; dermatological; antiinflammatory; antipsoriatic; psoriasis; mouse;
                                                                                                                                                                                                                                                        ö
                                                                                                                                                                                                                       Length 250;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Mouse atopic dermatitis-related protein seguence SegID123.
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                                                                                                                                                                                                                       83.5%; Score 1097; DB 7; 100.0%; Pred. No. 3.3e-83;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     218 GLYQGAGGPGGFGAQGPKGGSGSGPTIEEVD 250
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 226 GLYQCAGGPGPGGPGAQGPKGGSGSGPTIEEVD 258
                                                                                                                                                                                                                                       100.0%; Pred. No. 3.3 ive 0; Mismatches
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  06-AUG-2002; 2002JP-00229318.
14-MAY-2003; 2003JP-00136543.
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                                                                                                                                                                                                                                           Best Local Similarity 100.
Matches 213; Conservative
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                                                                                                                                                                                                                                       Similarity
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                                                                                                                                                                                         Sequence 250 AA;
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                    This invention relates to a novel method for the examination of atopic dermatitis in which the expression level of specified genes in specimens of skin taken from inflamed (rash) areas and non-inflamed areas is compared and the presence of increased or reduced expression in the inflamed areas determined. The invention may be useful for the development of compounds with a dermatological, antinflammatory or antiposoriatic activity acting as inhibitors and etimulators of genes involved in atopic dermatitis and psoriasis. The invention may be useful for treatment, prevention, diagnosis and assessment of atopic dermatitis and psoriasis. The present sequence is that of an atopic dermatitis and psoriasis. The present sequence is that of an atopic dermatitis related protein which was used in the exemplification of the invention.
                                                                                                                                                                                                                                                             384 KSENVQDLLILDVTPLSLGIETAGGVMTVLIKRNTTIPTKQTQTLTTYSDNQPGVLIQVY 443
                                                                                                                                                                                                                                                                                                EGERAMTKDNNLLGRFELSGIPPAPRGVPQIEVTFDIDANGILNVTATDKSTGKANKITI 120
                                                                                                                                                                                                                                                                                                                       503
                                                                                                                                                                                                                                                                                                                                               TNDKGRLSKEEIERMVQEAEKYKAEDEVQRERVSAKNALESYAFNMKSAVEDEGLKGKIS 180
                                                                                                                                                                                                                                                                                                                                                             TNDKGRLSKEDIERMVQEAEKYKAEDEKQRDKVSSKNSLESYAFNMKATVEDEKLQGKIN 563
                                                                                                                                                                                                                                                                                                                                                                                               237
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               human; liver disorder; hyperlipidaemia; hypertension; type II diabetes; tumour; liver; inflammatory disorder; immune response disorder; high-throughput screening; differential gene expression; gene therapy.
                                                                                                                                                                                                                                                                                                                                                                                               EADKKKVLDKCQEVISWLDANTLAEKDEFEHKRKELEQVCNPIISGLYQGAGG-PG--PG
                                                                                                                                                                                                                                                                                                             EGERAMTKDNNLLGKFELTGIPPAPRGVPOIEVTFDIDANGILAVSAVDKSTGKENKITI
                                                                                                                                                                                                                                               1 KSENVQDLLLLDVAPLSLGLETAGGVMTALIKRNSTIPTKQTQIFTTYSDNQPGVLIQVY
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                                                                                                                                                                                                DB 8; Length 646;
                                                                                                                                                                                                                        21; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Human protein expressed in a liver disorder #22.
                                                                                                                                                                                             83.3%; Score 1094.5; DB (81.4%; Pred. No. 1.8e-82; ive 23; Mismatches 21.
 Example 1; SEQ ID NO 123; 611pp; Japanese.
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                                                                                                                                                                                                                                                                                                                                                                                                                                                            624 GFPGGGAPPSGGASSGPTIEEVD 646
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                                                                                                                                                                                                                       Matches 214; Conservative
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                                                                                                                                                                                                          Local Similarity
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                                                                                                                                                                       Sequence 646 AA;
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The invention relates to a composition comprising several cDNAs that are differentially expressed in a liver disorder. The composition is useful for treating liver disorder such as hyperlipidaemia, hypertension, type II diabetes, tumours of the liver and disorders of the inflammatory and immune response. The composition is useful for a high-throughput method for compounds to identify a ligand which specifically binds a cDNA. A protein encoded by the cDNA is useful for high-throughput method for using a protein to screen several molecules or compounds to identify at least one ligand which specifically binds the protein which involves combining the protein encoded by the cDNA with several of molecules or compounds under conditions to allow specific compounds to indentify a least one ligand which specifically binds the protein encoded by the cDNA with several of molecules or compounds is useful for detecting and molecule or compound, therefore identifying a ligand which specifically chinds the protein. The composition is useful for detecting and quantifying differential gene expression, can be used in gene therapy, to formulate prognosis and to design a treatment regimen and to monitor the efficacy of treatment. The present sequence represents the amino acid sequence of a protein encoded by a cDNA differentially expressed in a
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               120
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hypoxia-regulated condition; tumourigenesis; angiogenesis; apoptosis;
inflammation; erythropoiesis; glycolysis; gluconeogenesis;
glucose transportation; catecholamine synthesis; iron transport;
infiric oxide synthesis; cancer; ischaemic condition; reperfusion injury;
retinopathy; neonatal stress; pre-eclampsia; atherosclerosis;
inflammatory condition; wound healing.
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           386 KSEKVQDILILIDVAPISLGLETVGGVMTALIKRNSTIPPKQTQIPTTYSDNQPGVLIQVY
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Gaps
treated human C3A liver cell cultures, useful for treating liver
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    16;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     83.2%; Score 1093; DB 8; Length 641; 81.5%; Pred. No. 2.4e-82; ive 16; Mismatches 17; Indels 10
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       617 CTGPACGTGYVPGRPATGPTIEEVD 641
                                                                                                                   Claim 1; SEQ ID NO 73; 41pp; English.
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    216; Conservative
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Sequence 641 AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      liver disorder
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This invention relates to novel human genes and gene product which are implicated in certain disease states. Compounds which modulate the proteins of the invention may have cytostatic, antifilammatory, captual manalogical, antiarteriosclerotic or vulnerary activities. The sequences of the invention may be useful for gene therapy. The invention may be useful for gene therapy. The invention may be useful for gene therapy. The invention may be useful for diagnosing or treating a hypoxia-regulated condition, such as tumourigenesis, anological response to hypoxia conditions, including processes such as glycolysis, glucose transportation, catecholamine synthesis, iron transport or nitric oxide transportation, as glycolysis, incomedence or nitric oxide injury, retinopathy, neonatal stress, pre-eclampsia, atherosclerosis, inflammatory conditions or wound healing. The present sequence is that of a disease related protein of the invention.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         EGERAMTKDNNLLGRFELSGIPPAPRGVPQIEVTFDIDANGILNVTATDKSTGKANKITI 120
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         TNDKGRLSKEEIERMVQEAEKYKAEDEVQRERVSAKNALESYAFNMKSAVEDEGLKGKIS 180
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         EADKKKVLDKCQEVISWLDANTLAEKDEFEHKRKELEQVCNPIISGLYQGAGG-----PG 235
                                                                                                                                                                                                                                                         or treating
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1 KSENVODLILLDVAPLSLGLETAGGVMTALIKRNSTIPTKQTQIFTTYSDNQPGVLIQVY
                                                                                                                                                                                                                                                      New substantially purified polypeptide, useful for diagnosing or tree a hypoxia-regulated condition, such as cancer, ischemia, reperfusion injury, retinopathy, pre-eclampsia, atherosclerosis, inflammation, or wound healing.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Gaps
                                                                                                                                                                          Mundy CR;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            6
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                DB 7; Length 650;
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                                                                                                                                                                            Naylor S,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Query Match
83.1%; Score 1091.5; DB
Best Local Similarity 79.8%; Pred. No. 3.3e-82;
Matches 213; Conservative 25; Mismatches 20
                                                                                                                                                                            Harris RA,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      -- PGGF--GAQGPKGGSGSGPTIEEVD 258
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                                                                                                                                                                                                                                                                                                                                         Claim 25, SEQ ID NO 437; 424pp; English.
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                                                                                                                                                                            Ward NR,
                                                                                                                                             (OXFO-) OXFORD BIOMEDICA UK LTD
                                                                                              23-AUG-2001; 2001GB-00020558.
05-OCT-2001; 2001GB-00024037.
                                                                23-AUG-2002; 2002WO-GB003892
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                                                                                                                                                                                                            WPI: 2003-290046/28.
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WO2003018621-A2
                                                                                                                                                                             Kingsman SM,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  15-JAN-2004
                                06-MAR-2003
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This invention relates to novel human genes and gene product which are implicated in certain disease states. Compounds which modulate the proteins of the invention may have cytoetatic, antinfinamentory, ophthalmological, antiarteriosclerotic or vulnerary activities. The sequences of the invention may be useful for gene therapy. The invention may be useful for diagnosing or treating a hypoxia-regulated condition, such as tumourigenesis, anglogenesis, apoptosis, inflammation, erythropoiesis, or the biological response to hypoxia conditions including processes such as glycolysis, glucomeogenesis, glucose transportation, carecholamine synthesis, iron transport or nitric oxide synthesis. The disease includes cancer, ischaemic conditions, reperfusion injury, retinopathy, neonatal stress, pre-eclampsia, atherosclerosis, allowed to the conditions or wound healing. The present sequence is that of
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                235
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            New substantially purified polypeptide, useful for diagnosing or treating a hypoxia-regulated condition, such as cancer, ischemia, reperfusion injury, retinopathy, pre-eclampsia, atherosclerosis, inflammation, or
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     443
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                          human; disease state; cytostatic; antiinflammatory; ophthalmological; antiarteriosclerotic; vulnerary; gene therapy; phypoxia-regulated condition; tumourigenesis; angiogenesis; apoptosis; inflammation; erythropoiesis; glycolysis; gluconeogenesis; glucose transportation; catecholamine synthesis; iron transport; infilio cancer; lschaemic condition; reperfusion injury; retinopathy; neonatal stress; pre-eclampsia; atherosclerosis; inflammatory condition; wound healing.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       EADKKKVLDKCQEVISWLDANTLAEKDEFEHKRKELEQVCNPIISGLYQGAGG-----PG
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                                                                                                                                                                                                                                                                                                                                                                                                                            Mundy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              7; Length 650;
                                                                                                                                                                                                                                                                                                                                                                                                                              Naylor S,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                83.1%; Score 1091.5; DB 79.8%; Pred. No. 3.3e-82;
                                                                                                                                                                                                                                                                                                                                                                                                                            Ward NR, Harris RA,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           disease related protein of the invention.
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Claim 25; SEQ ID NO 435; 424pp; English.
disease related protein SeqID435.
                                                                                                                                                                                                                                                                                                                                                                                          (OXFO-) OXFORD BIOMEDICA UK LTD
                                                                                                                                                                                                                                                                                                                                        23-AUG-2001; 2001GB-00020558.
05-OCT-2001; 2001GB-00024037.
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Best Local Similarity 79.8
Matches 213; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                              Kingsman SM, White J,
                                                                                                                                                                                                                                                                                                                                                                                                                                                               WPI; 2003-290046/28.
N-PSDB; ADD18947.
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            healing.
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539 DEDKQKILDKCNEIINWLDKNQTAEKEFFHQQKELEKVCNPIITKLYQSAGGMPGGMPG 598
                                  238 GF--GAQGPKGGSGSGPTIEEVD 258
                                                    599 GFPGGGAPPSGGASSRPTIEEVD 621
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                                δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Otsuki T, Wakamatsu A, Sato H, Ishii S;
Hio Y, Otsuka K, Nagai K, Irie R, Tamechika I;
Otsuka M, Nagahari K, Masuho Y;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  KSENVQDLLLLDVTPLSLGIETAGGVMTVLIKRNTTIPTKQTQTFTTYSDNQPGVL1QVY 418
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              EGERAMTKDNNLLGRFELSGIPPAPRGVPQIEVTFDIDANGILNVTATDKSTGKANKITI 120
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 The invention relates to a novel human polynuclectide and the encoded polypeptide. A polynuclectide of the invention may have a use in gene therapy. An oligonuclectide of the invention ADM06202-ADM06773 is useful as a primer for synthesizing the polynuclectide or as a probe for detecting the polynuclectide. The polynuclectides ADM01316-ADM01378 are useful in gene therapy, for developing a diagnostic marker or medicines for regulating their expression and activity, or as a target of gene therapy. The proteins ADM013759-ADM06201 encoded by the polynuclectides are useful as pharmaceutical agents. The present sequence represents a protein sequence of the invention.
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  for
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               New polynucleotides and polypeptides are useful in gene therapy, developing a diagnostic marker or medicines for regulating their expression and activity, or as a target of gene therapy.
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      21; Indels
                                                                                                                                                                                                                                                            human; gene therapy; diagnostic marker; pharmaceutical.
                                                                                                                                                                                                                          Human protein of the invention SEQ ID NO:3524.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      24; Mismatches
                       624 GMPGGFPGGGAPPSGGASSGPTIEEVD 650
236 -- PGGF--GAQGPKGGSGSGPTIEEVD 258
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Claim 1; SEQ ID NO 3524; 305pp; English.
                                                                                                                    ADM04839 standard; protein; 621 AA
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                                                                                                                                                                                                                                                                                                                                                                                                   12-APR-2002; 2002EP-00008400.
                                                                                                                                                                                                                                                                                                                                                                                                                                     22-MAR-2002; 2002JP-00137785.
                                                                                                                                                                                       (first entry)
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J, Isono Y, H
Yoshikawa T, C
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N-PSDB; ADM02396.
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                                                                                                                                                      ADM04839;
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                                                                               RESULT 77
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TNDKGRLSKEBIERMVQBAEKYKAEDEVQRERVSAKNALESYAFNMKSAVEDEGLKGKIS 180

EGERAMTKDINLLGKFELTGIPPAPRGVPQIEVTFDIDANGILINVSAVDKSTGKENKITI

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The invention discloses a composition comprising two or more isolated rat or human polymucleotides or a polymucleotide which represents a fragment, derivative or allelic variation of the nucleic acid sequence. Also claimed are a vector comprising the novel polymucleotide a host cell comprising the vector, a method for identifying a nucleotide sequence which is differentially regulated in an animal subjected to pain and a kit to perform the method, an array, a method for identifying an agent that is differentially expression of the polymucleotide sequence that increases or decreases the expression of the polymucleotide sequence that is differentially expressed in neuronal tissue of a first animal composition of the expression of a polymucleotide sequence which is differentially expression of a polymucleotide sequence which is differentially expression of a polymucleotide sequence which is differentially composition, a compound that regulates the activity of one or more of the polymucleotides, a method for producing a pharmaceutical composition, a method for identifying a compound useful in treating pain and a pharmaceutical composition or small molecule that regulates the activity in an animal of one or more of the polympeptides or their antibodies. The polymucleotide or the compound that composition of pain and a pharmaceutical composition comprising the one or more pain (e.g. spinal segmental nerve injury (SNI)) in an animal (e.g. gene injury (CCI) and spared nerve injury (SNI)) in an animal (e.g. gene conting pain. CCI) and spared nerve injury (SNI)) in an animal contraction injury (CCI) and sequence presented is a rat protein (described in Table 3 of therapy). The sequence presented is a rat protein (described in Table 3 of therapy). The sequence presented is a rat protein (e.g. gene context) and spared nerve injury (SNI) in an animal (e.g. gene context) and spared nerve injury (SNI) in an animal (e.g. gene context) and spared nerve injury (SNI) in an animal (e.g. gene context). The sequence data for this pa
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                                                                                                                                                                                                               Rat; pain; neuronal tissue; gene therapy; spinal segmental nerve injury; chronic constriction injury; CCI; spared nerve injury; SNI; Chung.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Costigan M;
                                                                                                                                                                  Rat Protein CAA54424, SEQ ID NO 13988.
ADD48290 standard; protein; 641 AA.
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01-NOV-2001; 2001US-0346382P.
26-NOV-2001; 2001US-0333347P.
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                                                                                            (revised)
(first entry)
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                                                                                                                                                                                                                                                                                          Rattus norvegicus.
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29-JAN-2004
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                                               ADD48290;
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ADD48287;
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                                                                                                                                                                                  386 KSEKVÓDLLLLDVAPLSLGLETAGGVMTVLIKRNSTIPTKOTQIFTTYSDNOPGVLIQVY 445
                                                                                                           EGERAMTKDNNLLGRFELSGIPPAPRGVPQIEVTFDIDANGILNVTATDKSTGKANKITI 120
                                                                                                                    TNDKGRLSKEEIERWVQEAEKYKAEDEVQRERVSAKNALESYAFNMKSAVEDEGLKGKIS 180
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                                                                                                                                                         1 KSENVQDLLLLDVAPLSLGLETAGGVMTALIKRNSTIPTKQTQIFTTYSDNQPGVLIQVY
                                                       Gaps
                                                      8;
                                   Length 641;
                                                      18; Indels
                                  Query Match
Best Local Similarity 83.5%; Pred. No. 7.7e-82;
Matches 218; Conservative 17; Mismatches 18;
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ftp.wipo.int/pub/published_pct_sequences
                                                                                                                                                                                                                                                                                                                                                    Rat Protein P55063, SEQ ID NO 14698.
                                                                                                                                                                                                                        238 GFGAQGPKGGSGSGPTIEEVD 258
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                                                                                                                                                                                                                                                                                      ADD48986 standard; protein; 641 AA.
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01-NOV-2001; 2001US-0346382P.
26-NOV-2001; 2001US-0333347P.
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(first entry)
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Unidentified.
                    Sequence 641 AA;
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comprising the vector, a method for identifying a nucleotide sequence which is differentially regulated in an animal subjected to pain and a kit to perform the method, an array, a method for identifying an agent that increases or decreases the expression of the polynucleotide sequence that is differentially expressed in neuronal tissue of a first animal subjected to pain, a method for identifying a compound which regulates the expression of a polynucleotide sequence which is differentially compound that regulates the activity of one or more of the compound that regulates the activity of one or more of the compound that regulates the activity of one or more of the restriction, a method for producing a pharmaceutical composition, a compound of or identifying a compound or small molecule that regulates the activity in an animal of one or more of the polypeptides given in the activity in an animal of one or more of the polypeptides given in the specification, a method for identifying a compound useful in treating or perint of the polypeptides or their antibodies. The polymucleotide or the compound that collipses or their antibodies. The polymucleotide or the compound that modulates its activity is useful for preparing a medicament for treating collipses or their antibodies. The polymucleotide or the compound that modulates its activity is useful for preparing a medicament for treating collipses. The sequence data for this patent did not form part of the printed specification, but was obtained in electronic form directly from WIPO at the wipo.int/pub/published_pot_sequences.
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Unidentified.
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RESULT 81

Costigan M;

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The invention discloses a composition comprising two or more isolated rat cor human polymucleotides or a polymucleotide which represents a fragment, derivative or allelic variation of the mucleic acid sequence. Also claimed are a vector comprising the movel polymucleotide, a host cell comprising the vector, a method for identifying a nucleotide sequence which is differentially regulated in an animal subjected to pain and a gent that increases or decreases the expression of the polymucleotide sequence that is differentially expressed in neuronal tissue of a first animal subjected to pain, a method for identifying a compound which regulates the expression of a polymucleotide sequence which is differentially compound that regulates the activity of one or more of the polymucleotides, a method for producing a pharmaceutical composition, a compound that regulates the activity of one or more of the regulates the activity in an animal of one or more of the regulates the activity in an animal of one or more of the regulates the activity in an animal of one or more of the polypeptides given in the specification, a method for identifying a compound useful in treating conjugates its activity is useful for preparing a medicament for treating colypeptides or their antibodies. The polymucleotide or the compound that modulates its activity is useful for preparing a medicament for treating colypeptides or their antibodies. The polymucleotide or the compound that modulates its activity is useful for preparing a medicament for treating colypeptides or their antibodies. The polymucleotide or the compound that modulates its activity is useful for preparing a medicament for treating colypeptides or their antibodies. The polymucleotide or the compound that modulates its activity is useful for preparing a medicament for treating colypeptides specification) which is differentially expressed during pain.

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                         14-AUG-2001; 2001US-0312147P.
01-NOV-2001; 2001US-0346382P.
26-NOV-2001; 2001US-0333347P.
                                                                                                                                 (GEHO ) GEN HOSPITAL CORP. (PARB ) BAYER AG.
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Sequence 641 AA;

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TNDKGRLSKEEIERMVQEAEKYKAEDEVQRERVSAKNALESYAFNMKSAVEDEGLKGKIS 180
                                                                                                                                                                                                                                                                                               61 EGERAMTKDNNLLGRFELSGIPPAPRGVPQIEVTFDIDANGILNVTATDKSTGKANKITI 120
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                                                                                                                                                                                                                                                                               181 EADKKKVLDKCQEVISWLDANTLAEKDEFEHKRKELEQVCNPIISGLYQ-GAGGP--GPG 2377
                                                                                         386 KSEKVQDLLLLDVAPLSLGLETAGGVMTVLIKRNSTIPTKQTQIFTTYSDNQPGVLIQVY
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                                                                      1 KSENVQDLLLLDVAPLSLGLETAGGVMTALIKRNSTIPTKQTQIFTTYSDNQPGVLIQVY
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82.7%; Score 1087; DB 7; Length 641; 83.5%; Pred. No. 7.7e-82; ive 17; Mismatches 18; Indele
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                                  Matches 218; Conservative
                Best Local Similarity
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Gaps 8; 1 KSENVQDLLLLDVAPLSLGLETAGGVMTALIKRNSTIPTKQTQIFTTYSDNQPGVLIQVY

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-----YTPGRARTGPTIEEVD 641

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The invention discloses a composition comprising two or more isolated rate or human polynucleotides or a polynucleotide which represents a fragment, derivative or allelic variation of the nucleic acid sequence. Also claimed are a vector comprising the novel polynucleotide, a host cell comprising the vector, a method for identifying a nucleotide sequence which is differentially regulated in an animal subjected to pain and a sequence that is differentially repressed in neuronal tissue of a first animal subjected to pain, a method for identifying a compound which regulates to subjected to pain, a method for identifying a compound which regulates the expression of a polynucleotide sequence which is differentially expressed in an animal subjected to pain, a method for identifying a compound that regulates the activity of one or more of the polynucleotides, a method for producing a pharmaceutical composition, a compound that regulates the activity of one or more of the polynucleotides or method for identifying a compound or small molecule that regulates the activity in an animal of one or more of the polypeptides given in the specification, a method for identifying a compound useful in treating compulates its activity is useful for preparing a medicament for treating colypeptides or their antibodies. The polynucleotide or the compound that computed to graph and a pharmaceutical composition comprising the one or more computation; and exparancent nerve injury (CNI) in an animal (e.g. spinal segmental nerve injury (SNI)) in an animal (e.g. spinal segmental nerve injury (SNI)) in an animal (e.g. spinal nerve injury (SNI)) in an animal (e.g. spinal segmental nerve injury (SNI)) in an animal (e.g. specification, but was obtained in electronic form diving fine with partner of the specification, but was obtained in electronic form directly from WIPO at fip. without int/pub/published_pot_sequences.
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Costigan M;
                                                                                                                                                              Rat Protein CAA54424, SEQ ID NO 11317.
                     ADD45650 standard; protein; 641 AA.
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01-NOV-2001; 2001US-0346382P.
26-NOV-2001; 2001US-0333347P.
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                                                                                                                (first entry)
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                                                                     ADD45650;
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ADD45650
ID ADD4
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384 KSENVQDLLLLDVTPLSLGIETAGGVMTVLIKRNTTIPTKQTQTFTTYSDNQPGVLIQVY 443

EGERAMTKDNNLLGRFELSGIPPAPRGVPQIEVTFDIDANGILNVTATDKSTGKANKITI

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180

121 TNDKGRLSKEEIERMVQEAEKYKAEDEVQRERVSAKNALESYAFNMKSAVEDEGLKGKIS

564 DEDKQXILDKCNEIISWLDKNQTAEKEEFEHQQKELEKVCNPIITKLYQSAGAMPGGMPG

624 GFPGGGAPPSGGASSGPTIEEVD 646 GF--GAQGPKGGSGSGPTIEEVD 258

EADKKKVLDKCQEVISWLDANTLAEKDEFEHKRKELEQVCNPIISGLYQGAGG-PG--PG

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mycobacteria.
                                                                                                     TNDKGRLSKEEIERMVQEAEKYKAEDEVQRERVSAKNALESYAFNWKSAVEDEGLKGKIS 180
                                                                                                                     506 TNDKGRLSKEEIERWVQEAERYKAEDEGQREKIAAKNALESYAFNWKSAVGDEGLKDKIS 565
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Fig. 2 provides an alignment of heat shock proteins from a variety of organisms: 1. M.hyopneumoniae (Mhyhsp70 - AR03922); 2. Bacillus megaterium (Bamehsp70 - AR03923); 3. E. coli (dnaK - AAR03924); 4. T. cruzi (tc70kd - AAR03925); 5. T. cruzi (AAR03926); 6. Rat ratus (rathsp70 - AAR03927); 7. Xenopus laevis (x170 - AAR03928); 8. Homo sapiene (humbsp70 - AAR03929); 9. Gallus gallus (chkhsp70 - AAR03930); 10. Zea mays (mzehsp70 - AAR03931); 11. Serratia marcescens (snahsp70 - AAR03931); 11. Serratia marcescens (snahsp70 - AAR03931); 12. Cruzi can be use
                                                                                                                                                                           181 EADXKKVLDKCQEVISWLDANTLAEKDEFEHKRKELEQVCNPIISGLYQ-GAGGP--GPG
EGERAMIKDNNLLGRPELSGI PPAPRGVPQI EVTPDIDANGILNVTATDKSTGKANKITI
                                                             EGERAMTRDINILIGRFDLTGI PPAPRGVPQI EVTFDI DANGI LINUTAMDKSTGKANKI TI
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              in vaccines and diagnosis involving e.g. Trypanosoma, Mycoplasma and Mycobacteria species. (Updated on 27-AUG-2003 to correct OS field.)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Length 646;
                                                                                                                                                                                                                                                                                                                                                                                                                                                Hsp70; heat shock protein; Trypanosoma cruzi; vaccines; HSP
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           of Trypanosoma
muco-plasma or
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    82.5%; Score 1084.5; DB 2; Length
81.0%; Pred. No. 1.3e-81;
ive 23; Mismatches 22; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Proteins homologous to heat shock proteins vaccines and diagnosis for species of e.g.
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                                                                                                                                                                                                                     238 GFGAQGPKGGSGSGPTIEEVD 258
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-----YTPGRARTGPTIEEVD 641
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                                                                                                                                                                                                                                                                                                                      AAR03927 standard; protein;
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(first entry)
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Best Local Similarity 81.0%
Matches 213; Conservative
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                WPI; 1990-115820/15
                                                                                                                                                                                                                                                                                                                                                                                                                       Rat HSP (rathsp70).
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Rattus rattus.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         (CODO-) CODON
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  12-SEP-1988;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              12-SEP-1988;
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30-AUG-1990
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, Sato H, Ishii S;
i K, Irie R, Tamechika I;
Masuho Y;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       for
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   New polynucleotides and polypeptides are useful in gene therapy, developing a diagnostic marker or medicines for regulating their expression and activity, or as a target of gene therapy.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           DB 7; Length 413;
                                                                                                                                                               human; gene therapy; diagnostic marker; pharmaceutical
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Nio Y, Otsuka K, Nagai K,
Stsuka M, Nagahari K, Masu
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80.6%; Score 1059.5; DB 7

Best Local Similarity 79.1%; Pred. No. 8.6e-80;

Matches 204; Conservative 24; Mismatches 25;
                                                                                                                               Human protein of the invention SEQ ID NO:4616.
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Otsuka M,
                                 ADM05931 standard; protein; 413
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                                                                                                                                                                                                                                                                                                    12-APR-2002; 2002EP-00008400.
                                                                                                                                                                                                                                                                                                                                    22-MAR-2002; 2002JP-00137785.
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                                                                                                                                                                                                                                                                                                                                                                                                                      seki N, Yoshikawa T,
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                                                                                                                                                                                                    Homo sapiens.
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                                                                                                20-MAY-2004
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                                                                  ADM05931;
RESULT
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Indels

9

Gaps

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KSENVQDLLLLDVAPLSLGLETAGGVMTALIKRNSTIPTKQTQIFTTYSDNQFGVLIQVY

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or human polymucleotides or a polymucleotide which represents a fragment, derivative or allelic variation of the nucleic acid sequence. Also claimed are a vector comprising the novel polymucleotide, a host cell comprising the vector, a method for identifying a nucleotide sequence which is differentially regulated in an animal subjected to pain and a kit to perform the method, an array, a method for identifying an agent that increases or decreases the expression of the polymucleotide sequence that is differentially expressed in neuronal tissue of a first animal subjected to pain, a method for identifying a compound which regulates the expression of a polymucleotide sequence which is differentially expressed in an animal subjected to pain, a method for identifying a compound that regulates the activity of one or more of the
                                                                                                                                                                                                                                              180
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                                                                                                                                                                                 280
                                                                                                                                                                                                                                                                                                            340
                                                                                                                                                                                                                                                                                                                                                                                                         EGERAMTKONNLLGRFELSGIPPAPRGVPQIEVTFDIDANGILNVTATDKSTGKANKITI 120
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                                                                                                                                                       TNDKGRLSKDDIDRMVQEAERYKSEDEANRDRVAAKNALESYTYNIKQTVEDEKLRGKIS
                                TNDKGRLSKEEIERMVQEAEKYKAEDEVQRERVSAKNALESYAFNMKSAVEDEGLKGKIS
                                                                                                                                                                                                                                                                                                                                                                         EADKKKVLDKCQEVISWLDANTLAEKDEFEHKRKELEQVCNPIISGLYQGAGGPGFGFG
KSENVQDLLLLDVAPLSLGLETAGGVMTALIKRNSTIPTKQTQIFTTYSDNQPGVLIQVY
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Human, pain, neuronal tissue, gene therapy, spinal segmental nerve injury, chronic constriction injury, CCI, spared nerve injury, SNI, Chung.
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Human Protein P54652, SEQ ID NO 9437.
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           14-AUG-2001; 2001US-0312147P.
01-NOV-2001; 2001US-0346382P.
26-NOV-2001; 2001US-0333347P.
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(FARB ) BAYER AG.
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GENBANK; P54652.
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ADB63493
ID ADB633
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DY BHUMAN
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MW SPAIR
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method for identifying a compound or small molecule that regulates the activity in an animal of one or more of the polypeptides given in the specification, a method for identifying a compound useful in treating pain and a pharmaceutical composition comprising the one or more polypeptides or their antibodies. The polynucleotide or the compound that modulates its activity is useful for preparing a medicament for treating pain (e.g. spinal segmental nerve injury (Chung), chronic constriction injury (CCI) and spared nerve injury (SNI) in an animal (e.g. gene the raperitication) which is differentially expressed during pain. Note: The sequence data for this patent did not form part of the printed specification, but was obtained in electronic form directly from WIPO at ftp. wipo.int/pub/published_pct_sequences.
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  507 TNDKGRLSKDDIDRWVQEAERYKSEDEANRDRVAAKNALESYTYNIKQTVEDEKLRGKIS
                                                                                                                                                                                                                                                                                                                                                                                1 KSENVQDLLLLDVAPLSLGLETAGGVMTALIKRNSTIPTKQTQIFTTYSDNQPGVLIQVY
                                                                                                                                                                                                                                                                                                                                                                                                      EGERAMTKONNLLGRFELSGIPPAPRGVPQIEVTFDIDANGILNVTATDKSTGKANKITI
                                                                                                                                                                                                                                                                                                                                                                                                                                                                            447 EGERAMTKDNNLLGKFDLTGIPPAPRGVPQIEVTFDIDANGILNVTAADKSTGKENKITI
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             TNDKGRLSKEBIBRMVQBABKYKABDBVQRBRVSAKNALBSYAFNMKSAVBDBGLKGKIS
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composition,
                                                                                                                                                                                                                                                                                                                                                Gaps
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                                                                                                                                                                                                                                                                                                                                              2;
                                                                                                                                                                                                                                                                                                      80.6%; Score 1059.5; DB 7; Length 639; 79.1%; Pred. No. 1.5e-79; ive 24; Mismatches 25; Indels 5;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  screening assay; diabetes mellitus;
 polynucleotides, a method for producing a pharmaceutical
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627 S----GASGGPTIEEVD 639
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17-JUN-2002; 2002US-0389987P.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           04-APR-2003; 2003WO-US010870
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                                                                                                                                                                                                                                                                                                            Query Match
Best Local Similarity
                                                                                                                                                                                                                                                                        Sequence 639 AA;
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This invention relates to novel mitochondrial targets that can be used for therapeutic intervention in treating a disease associated with altered mitochondrial function. Specifically, it refers to a method for identifying proteins of the human heart mitochondrial proteome that are useful for drug screening assays, as well as therapeutic targets. The present invention describes a method for identifying such proteins that can be used in the treatment of various diseases associated with altered mitochondrial function including diabetes mellitus, Huntington's disease, osteoarthritis, Leber's hereditary optic neuropathy (LHOM), mitochondrial concephalopathy lactic acidosis and stroke (MELAS), myoclonic epilepsy ragged red fibre syndrome (MERAP) or cancer. Accordingly, these compositions have neuroprotective, nootropic, antidiabetic, antidiabetic activities. This polypeptide sequence is a human heart.

The composition of the invention.
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Leber's hereditary optic neuropathy; LHON;
antochondrial encephalopathy lactic acidosis and stroke; MELAS;
myoclonic epilepsy ragged red fibre syndrome; MERRF; cancer;
neuroprotective; nootropic; antidiabetic; anticonvulsant; antiarthritic;
                                                                                                                   Identifying a mitochondrial target for drug screening assays and for treating diseases associated with altered mitochondrial function, comprises detecting a modified polypeptide in a sample and correlating
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1 KSENVÕDLLLLDVAPLSLGLETAGGVMTALIKRNSTIPTKQTQIFTTYSDNQPGVLIQVY
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Human heat mitochondrial protein as a therapeutic target SeqID1693.
                                 Gibson BW, Taylor SW, Glenn GM;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                2;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             80.6%; Score 1059.5; DB 7; Length 639; 79.1%; Pred. No. 1.5e-79;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  mitochondrial; human; screening assay; diabetes mellitus;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  25; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  24; Mismatches
                                                                                                                                                                                                           Claim 1; SEQ ID NO 1723; 180pp; English.
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     241 AOGPKGGSGSGPTIEEVD 258
                                  Zhang B,
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(BUCK-) BUCK INST AGE RES
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Best Local Similarity
                                  Fahy ED,
                                                                                  WPI; 2003-845369/78
                                                                                                                                                                          with the disease.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Sequence 639 AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  06-MAY-2004
                                  Ghosh SS,
Warnock DE;
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This invention relates to novel mitochondrial targets that can be used after therapeutic intervention in treating a disease associated with altered mitochondrial function. Specifically, it refers to a method for identifying proteins of the human heart mitochondrial proteome that are useful for drug screening assays, as well as therapeutic targets. The present invention describes a method for identifying such proteins that can be used in the treatment of various diseases associated with altered mitochondrial function including diabetes mellitus, Huntington's disease, asstearthritis, Leber's hereditary optic neuropathy (LHON), mitochondrial encephalopathy lactic acidosis and stroke (MELAS), myoclonic epilepsy ragged red fibre syndrome (MERRE) or cancer. Accordingly, these
                                                                                                                                                                                                                                                                                                                                                                             Identifying a mitochondrial target for drug screening assays and for treating diseases associated with altered mitochondrial function, comprises detecting a modified polypeptide in a sample and correlating
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  compositions have neuroprotective, nootropic, antidiabetic, anticonvulsant, antiarthritic, osteopathic, ophthalmological and cytostatic activities. This polypeptide sequence is a human heart mitochondrial protein of the invention.
                                                                                                                                                                                                                                                                                           Glenn GM;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     80.6%; Score 1059.5; DB 7; Length 639; 79.1%; Pred. No. 1.5e-79;
                                                                                                                                                                                                                                                                                           Taylor SW,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         24; Mismatches
                                                                                                                                                                                                                                                                                           Gibson BW,
osteopathic; ophthalmological; cytostatic
                                                                                                                                                                                                                                                                                                                                                                                                                                                               Claim 1; SEQ ID NO 1693; 180pp; English
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     241 AQGPKGGSGSGPTIEEVD 258
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                                                                                                                                                                                                                                                                                           Zhang B,
                                                                                                                                     04-APR-2003; 2003WO-US010870.
                                                                                                                                                                         2002US-0372843P.
                                                                                                                                                                                       17-JUN-2002; 2002US-0389987P.
20-SEP-2002; 2002US-0412418P.
                                                                                                                                                                                                                                         (MITO-) MITOKOR.
(BUCK-) BUCK INST AGE RES.
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Best Local Similarity 79.1;
Matches 204; Conservative
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                                                                                                                                                                                                                                                                                             Fahy ED,
                                                                                                                                                                                                                                                                                                                                                                                                                                 with the disease.
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                                                                     WO2003087768-A2.
                                       Homo sapiens.
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     The invention relates to novel polynucleotide and polypeptides for treating psoriasis or a sequence having at least 80% identity to the above sequences. The nucleic acid is useful for preparing a composition for diagnosing or treating psoriasis in a mammal. This sequence corresponds to one of the polypeptides of the invention.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     EQDKAKILDKCQEVINWLDRNQMAEKDBYEHKQKELERVCNPIISKLYQGGPGGGGGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Wood WI;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            New PRO nucleic acid or polypeptide, useful for preparing a pharmaceutical composition for diagnosing or treating psoriasis in
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 S,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Length 639;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Schoenfeld J, Williams PM,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 25; Indels
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                                                                                                                                                                                      antipsoriatic; gene therapy; psoriasis; diagnosis.
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                                                                                                                                               Antipsoriatic protein sequence #455
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                       standard; protein; 639
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                                                                                                      (first entry)
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Clark H,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 WPI; 2004-305105/28.
N-PSDB; ADN04524.
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Best Local Similarity
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       181 EADKKKVLDKCQEVISWLDANTLAEKDEFEHKRKELEQVCNPIISGLYQGAGGPGFGGFG 240
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               The likelihood of mammalian fertilisation is decreased by contacting a gamete with a sulphoglycolipid immobilising protein 1 (SITPI)/ sulphated glyco-moiety interfering composition. The interfering compon. is e.g. SLIPI (or analogues such as the mouse SLIPI analogue "HSC708" comprising the amino acid sequence ARR430021. SLIPI binds to sulphogalactosylglycerolipid (SGG), a testular glycolipid, and to sulphogalactosylglycerolipid (SGG), a certular glycolipid, and to sulphogalactosylglycerolipid.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               remembers in rerrilisation decrease for detecting and treating infertility using sulpho glyco lipid immobilising protein 1-sulphated-glyco moiety interfering compsn., for mycoplasma infection treatment.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          1 KSENVQDLLLLDVAPLSLGLETAGGVMTALIKRNSTIPTKQTQIFTTYSDNQPGVLIQVY
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            387 KSENVÕDLLLLDVIPLSLGIETAGGVMIPLIKRNITIPIKOTQIFITYSDNQSSVLVQVY
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   EGERAMTKDNNLLGRFELSGIPPAPRGVPQIEVTFDIDANGILNVTATDKSTGKANKITI
                                                                                                                           Sulphoglycolipid immobiliaing protein 1; sperm plasma membrane; mouse homologue; HSC70B; mammalian; infertility; mycoplasma; anti-SLIP1 antibody.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        11;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          633;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        20; Indels
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Tanphaichitr N;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Claim 2; Page 60-62; 77pp; English.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ADE63491 standard; protein; 633 AA.
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       (BERL-) BERLEX LAB INC.
(OTTA-) OTTAWA CIVIC HOSPITAL.
                                                                                                                                                                                                                                                                                                                                                                                                 93WO-US003816
                                                                             Mouse SLIP1 homologue HSC70B
                                                                                                                                                                                                                                                                                                                                                                                                                                                     92US-00873961
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(revised)
(first entry)
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Best Local Similarity 79.1<sup>3</sup>
Matches 204; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Faulds DH, Lingwood CA,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        WPI; 1993-368422/46.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Sequence 633 AA;
                                                                                                                                                                                                                                          Mus musculus.
                                                                                                                                                                                                                                                                                        W09321954-A1
                                                                                                                                                                                                                                                                                                                                                                                                 22-APR-1993;
                                                                                                                                                                                                                                                                                                                                                                                                                                                     24-APR-1992;
25-MAR-2003
20-MAY-1994
                                                                                                                                                                                                                                                                                                                                             11-NOV-1993
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(first entry)

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The invention discloses a composition comprising two or more isolated rate or human polynuclectides or a polynuclectide which represents a fragment, cor human polynuclectides or a polynuclectide which represents a fragment, claimed are a vector comprising the movel polynuclectide, a host cell comprising the vector, a method for identifying a nuclectide sequence which is differentially regulated in an animal subjected to pain and a chief increases or decreases the expression of the polynuclectide sequence that increases or decreases the expression of the polynuclectide sequence that increases or decreases the expression of the polynuclectide sequence that increases or decreases the expression of a first animal subjected to pain, a method for identifying a compound which regulates the expression of a polynuclectide sequence which is differentially expressed in an animal subjected to pain, a method for identifying a compound that regulates the activity of one or more of the polynuclectides, a method for producing a pharmaceutical composition, a compound that regulates the activity of one or more of the polypeptides given in the appropriate or method for identifying a compound useful in treating expressed for identifying a compound or small molecule that regulates the specification, a method for identifying a compound useful in treating pain segmental nerve injury (CNI) and appared nerve injury (SNI) in an animal (e.g. spinal segmental nerve injury (SNI)) in an animal (e.g. spinal segmental nerve injury (SNI)) in an animal (e.g. spinal sequence data for this patent did not form part of the printed the sequence data for this patent did not form part of the printed specification) which is differentially expressed during pain. Note:

The sequence data for this patent did not form part of the printed specification, but was obtained in electronic form directly from MIPO at
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          New composition comprising two or more isolated polypeptides, useful for preparing a medicament for treating pain in an animal.
                                                                                                                 Rat; pain; neuronal tissue; gene therapy; spinal segmental nerve injury; chronic constriction injury; CCI; spared nerve injury; SNI; Chung.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ftp.wipo.int/pub/published_pct_sequences
                                                                  Protein CAA33735, SEQ ID NO 9435.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Claim 1; Page; 1017pp; English.
                                                                                                                                                                                                                                                                                                                                                                      14-AUG-2001; 2001US-0312147P.
01-NOV-2001; 2001US-0346382P.
26-NOV-2001; 2001US-0333347P.
                                                                                                                                                                                                                                                                                                                             14-AUG-2002; 2002WO-US025765.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                      (GEHO ) GEN HOSPITAL CORP. (FARB ) BAYER AG.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Woolf C, D'urso D,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          WPI; 2003-268312/26.
                                                                                                                                                                                        Rattus norvegicus
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  GENBANK; CAA33735
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Sequence 633 AA;
                                                                                                                                                                                                                                  WO2003016475-A2.
                        29-JAN-2004
                                                                                                                                                                                                                                                                                27-FEB-2003.
                                                                       Rat
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11; DB 7; Length 633; 21; Indels 79.7%; Score 1047.5; DB 78.7%; Pred. No. 1.5e-78; iive 23; Mismatches 21; Conservative Similarity 203; Query Match Local Best Loca Matches

1 KSENVQDLILLDDVAPLSLGLETAGGVMTALIKRNSTIPTKQTQIFTTYSDNQPGVLIQVY

EGERAMTKDNNLLGRFELSGIPPAPRGVPQIEVTFDIDANGILNVTATDKSTGKANKITI 120 61

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181 EADKKKVLDKCQEVISWLDANTLAEKDEFEHKRKELEQVCNPIISGLYQGAGGPGGFG 240 447 EGERAMTKDNNLLGKFDLTGIPPAPRGVPQIEVTFDIDANGILNVTAADKSTGKENKITI 506 121 TNDKGRLSKEEIERMVQEAEKYKAEDEVQRERVSAKNALBSYAFNMKSAVEDEGLKGKIS 258 621 -----GGSSGGPTIEEVD 633 241 AQGPKGGSGSGPTIEEVD g 셤 ò Š

ABR40401 standard; protein; 647 AA RESULT 90

ABR40401;

(first entry) 08-AUG-2003

Xenopus HSP70 protein.

Costigan M;

Befort K,

heat shock protein; HSP; cytokine; CC chemokine; nitric oxide; cancer; antimicrobial; virucide; cytostatic; microbial infection; anti-HIV; viral infection; immune system disorder; vaccine; HSP70; xenopus.

Xenopus sp.

WO2003029289-A2

.0-APR-2003

03-OCT-2002; 2002WO-GB004475.

03-OCT-2001; 2001GB-00023756.

(UNICO) KINGS COLLEGE LONDON

Singh M, Lehner T, Kelly CG,

Υ; Wang

WPI; 2003-430189/40.

Novel heat shock protein fragment useful for treating microbial infection, viral infection or cancer, that can increase the level of cytokines and/or CC chemokines and/or nitric oxide produced by a cell.

Example 3; Page 17-20; 30pp; English.

The invention relates to a novel heat shock protein fragment (HSP) that can increase the level of one or more cytokines and/or one or more CC chemokines and/or nitric oxide produced by a cell, above that caused by the corresponding full length heat shock protein. The protein fragment protein fragment is useful in therapy, in treatment or prophylaxis of a disease and in the manufacture of a medicament for treatment or prophylaxis of a disease such as microbial infection, viral infection, prophylaxis of a disease such as microbial infection, viral infection, adjuvant in vaccines, preferably, anti-HIV vaccines. The present sequence represents the xenopus HSP70 protein

Sequence 647 AA;

Gaps 9; DB 6; Length 647; 22; Indels / Match
Local Similarity 78.1%; Pred. No. 1.3e-77, nes 207; Conservative 27; Mismatches 22 Query Match Best Loca Matches

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1 KSENVQDLLLLDVAPLSLGLETAGGVMTALIKRNSTIPTKQTQIFTTYSDNQPGVLIQVY

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According to the legend of Fig 2, the G. gallus HSP sequence has 635 amino acid residues, the sequence itself has only 634, including "0" (?) are postition 634. Fig. 2 provides an alignment of heat shock proteins from a variety of organisms: 1. M. hyopneumoniae (Mryhsp70 - AAR03922); 2. Bacillus megaterium (Bmehsp70 - AAR03923); 3. E. coli (dnaK - AAR03924); 4. T. cruzi (tc70kd - AAR03925); 5. T. cruzi (ARA03925); 6. Rat rattus (rathsp70 - AAR03927); 7. Xenopus priss (x170 - AAR03928); 8. Hono sapiens (humhsp70 - AAR03921); 9. Gallus gallus (chkisp70 - AAR03930); 10. Zea mays (mzehsp70 - AAR03921); 11. Serratia marcescens (smahsp70 - AAR03931); rhe proteins having homology to hsp's of T. cruzi can be used in vaccines and diagnosis involving e.g. Trypanosoma, Mycoplasma and
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Proteins homologous to heat shock proteins of Trypanosoma cruzi - used in vaccines and diagnosis for species of e.g. muco-plasma or mycobacteria.
                                                                                                                                              623
                TNDKGRLSKEDIEKOVQEAEKYKADDDAQRERVDAKNALESYAFNLKSMVEDENVKGKIS
                                                                                                                                EGERAMIKDINILLGRFELSGIPPAPRGVPQIEVIFDIDANGILNVIATDKSTGKANKITI
                                                        TNDKGRLSKEEIERMVQEAEKYKAEDEVQRERVSAKNALESYAFNMKSAVEDEGLKGKIS
                                                                                                               EADKKKVLDKCQEVISWLDANTLABKDEFEHKRKELEQVCNPIISGLYQGAGGPG--PGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       /note= "residue given as "O" in specification"
                                                                                                                                                                                                                                                                                                                                                                                                 Hsp70; heat shock protein; Trypanosoma cruzi; vaccines; HSP
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Disclosure; Fig 2.1-2.14; 86pp; English.
                                                                                                                                                                         P----GAQGPKGGSGSGPTIEEVD 258
                                                                                                                                                                                            624 MPGSSCGAQARQGGN-SGPTIEEVD 647
                                                                                                                                                                                                                                                                                                                                                                                                                                                          Location/Qualifiers
                                                                                                                                                                                                                                                                             AAR03930 standard; protein; 634 AA
                                                                                                                                                                                                                                                                                                                                                                    Gallus gallus HSP (chkhsp70).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Sias S;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              88US-00243474.
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                                                                                                                                                                                                                                                                                                                                       30-AUG-1990 (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Faulds D,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 WPI; 1990-115820/15.
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                                                                                                                                                                                                                                                                                                                                                                                                                           Gallus gallus.
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              12-SEP-1988;
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61
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                                                                     506
                                                                                                    180
                                                                                                                                995
                                                                                                                                                                            567 DQDKQKVLDKCQEVISSLDRNQMAEKEEYEHKQKELEKLCNPIVTKLYQGAGA-----G 620
                                           120
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        The invention relates to a recombinant DNA construct comprising a promoter functional in a plant cell, where the promoter is positioned to provide for expression of a polynucleotide encoding a polypeptide from a microbial source. The invention also relates to a transformed plant comprising the recombinant DNA construct and a method of producing a transformed plant the having an improved property. The plant is a crop plant such as maize or soybean. The method of producing a transformed plant having an improved property comprises transforming a plant with the
                                                                                                                                                                                                                                                                                                                                                                                                                                                         cold tolerance; heat tolerance; drought tolerance; herbicide; osmosis; pathogen tolerance; pest tolerance; plant disease resistance; cell cycle pathway modification; plant growth regulator; homologous recombination; seed oil yield; protein yield; carbohydrate; nitrogen; phosphorus; photosynthesis; lignin; galactomannan; bacterial polypeptide.
                                                                                                                  Recombinant DNA construct; transformed plant; improved plant property;
387 KSENVODLLLLDVTPLSLGIETAGGVWTALIKRNTTIPTKQTQTFTTYSDNQSSVLVQVY
                                                         TNDKGRLSKEEI ERMVQEAEKYKAEDEVQRERVSAKNALESYAFNMKSAVEDBGLKGKIS
                                                                                                                                                             181 EADKKKVLDKCQEVISWLDANTLAEKDEFEHKRKELEQVCNPIISGLYQQAGGPGGFG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Goldman BS;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Claim 1; SEQ ID NO 6233; 122pp; English.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Chen X,
                                                                                                                                                                                                                                                                                                                            ADN23580 standard; protein; 640 AA.
                                                                                                                                                                                                                        AQGPKGGSGSGPTIEEVD 258
                                                                                                                                                                                                                                          Slater SC,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          20-FEB-2003; 2003US-00369493
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        21-FEB-2002; 2002US-0360039P
                                                                                                                                                                                                                                                                                                                                                                                                                   Bacterial polypeptide #6233.
                                                                                                                                                                                                                                                                                                                                                                                     02-DEC-2004 (first entry)
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SLATER S C.
CHEN X.
GOLDMAN B S.
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                                                                                                  121
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Bacteria.
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                                                                                                                                                                                                                                                  621
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Gaps

,11;

Length 634;

78.8%; Score 1035.5; DB 2; Length 79.5%; Pred. No. 1.5e-77; ive 23; Mismatches 19; Indel8

Query Match
Best Local Similarity 79.5
Matches 205; Conservative

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EGERAMTKDNNILGRFELSGIPPAPRGVPQIEVTFDIDANGILNVTATDKSTGKANKITI 120
                                                                        Fig. 2 provides an alignment of heat shock proteins from a variety of organisms: 1. M.hyopneumoniae (Mhyhsp70 - AAR03922); 2. Bacillus megatecrium (Bmehsp70 - AAR03923); 3. E. coli (dark - AAR03924); 4. T. cruzi (tc70kd - AAR03925); 5. T. cruzi (AAR03926); 6. Rat rattus (rathsp70 - AAR03927); 7. Xenopus laevis (x170 - AAR03928); 8. Homo sapiens (humhsp70 - AAR03929); 9. Gallus gallus (chkhsp70 - AAR03930); 10. Zea mays (mzehsp70 - AAR03931); 11. Serratia marcescens (smahsp70 - AAR03932). The proteins having homology to hsp's of T. cruzi can be use in vaccines and diagnosis involving e.g. Trypanosoma, Mycoplasma and
     vaccines and diagnosis for species of e.g. muco-plasma or mycobacteria
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Drosophila; developmental biology; cell signalling; insecticide;
                                                                                                                                                                                                                                                                                                                          DB 2; Length 647;
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                                                                                                                                                                                                                                                                                                                          78.5%; Score 1031.5; DB 78.1%; Pred. No. 3.3e-77; iive 26; Mismatches 23
                                           Disclosure, Fig 2.1-2.14; 86pp; English.
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11-JUL-2000; 2000US-00614150.
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Best Local Similarity 78.1
Matches 207; Conservative
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                                                                                                                                                                                                                                                      Mycobacteria species
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N-PSDB; ABL04617.
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                                                                                                                                                                                                                                                                                         Sequence 647 AA;
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recombinant DNA construct and growing the transformed plant, where the polynucleotide or polypeptide is useful for improving plant properties. The recombinant DNA construct is useful for producing plant properties. The recombinant DNA construct is useful for producing plants with improved plant properties, e.g. improved cold, heat or drought tolerance, colerance to herbicides, extreme osmotic conditions, pathogens or pests, increased resistence to plant disease, better growth rate by modification of the cell cycle pathway with plant growth regulators, increased rate of homologous recombination, modified seed oil or protein yield and/or content, improved yield by modification of arbohydrate, nitrogen or phosphorus use and/or uptake, by modification of photosynthesis or by providing improved plant growth and development under at least one stress condition, improved lignin production or improved galactomannan conduction. This sequence represents a bacterial polypeptide used in the scope of the invention Note: The sequence data for this patent did not for many part of the printed specification but was obtained in electronic
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              565 PEDKKKIEDKCDEILKWLDSNQTAEKEEFEHQQKDLEGLANPIISKLYQSAGGAPPG--A 622
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Proteins homologous to heat shock proteins of Trypanosoma cruzi - used in
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Hsp70; heat shock protein; Trypanosoma cruzi; vaccines; HSP
                                                                                                                                                                                                                                                                                     format from USPTO at segdata.uspto.gov/sequence.html
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Gaps

N-PSDB; ADQ89617.

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                                                                                                   capable of detecting 1000 or more genes from Drosophila. The invention useful in developmental biology and in elucidating cell signalling and cell-cell interactions in higher eukaryotes for the development of insecticides, therapeutics and pharmaceutical drugs. The invention discloses genomic DNA sequences (ABL16176-ABL30511), expressed DNA sequences (ABL16176-ABL30511), expressed DNA ABB72072). The sequence data for this patent did not form part of the printed specification, but was obtained in electronic format directly from WIPO at ftp.wipo.int/pub/published_pct_sequences
isolated nucleic acid detection reagent for detecting 1000 or more es from Drosophila and for elucidating cell signaling and cell-cell
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                                                                                          invention relates to an isolated nucleic acid detection reagent
                                                                                                                                                                                                                                                                                                                        31; Indels 10;
                                                          Disclosure; SEQ ID NO 8334; 21pp + Sequence Listing; English
                                                                                                                                                                                                                                                                                        78.4%; Score 1030; DB 4; Length 651; 74.3%; Pred. No. 4.5e-77; ive 28; Mismatches 31; Indels 10
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06-MAY-2003; 2003US-0468402P
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Best Local Similarity 74.3
Matches 199; Conservative
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                              interactions
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The present invention relates to a polynucleotide for preventing, treating or diagnosing a disease in an individual. The composition or the polypeptide, polynucleotide or RNA precursor, or antibody is useful for diagnosing, preventing or treating diseases (e.g. cell proliferative diseases such as cancer) in an individual. These may also be used for identifying substances capable of binding to or modulating the function of the polypeptide, capable of affecting the function of the corresponding gene, or capable of inhibiting the cell division cycle or cell cycle progression, preferably mitosis and/or meiosis. The present sequence represents an antagonist of cell cycle progression protein
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                              New cell cycle progression genes and proteins for modulating cell cycle progression in cells, for preventing, treating or diagnosing cell proliferative diseases (e.g. cancer) or for identifying modulators of
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   564 DSDRTTILDKCNETIKWLDANQLADKEEYEHRQKELEGVCNPIITKLYQGAGFPPGGMPG
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                                                                                                                                                                                                                                                                                                                                                                                                                   Length 651;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                       Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                         31;
                                                                                                                                                                                                                                                                                                                                                                                                                 78.4%; Score 1030; DB 8; 74.3%; Pred. No. 4.5e-77; iive 28; Mismatches 31;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       GPG--PGGFGAQGPKGGSGSGPTIEEVD 258
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                                                                                                                         Claim 2; SEQ ID NO 48; 461pp; English.
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                                                                                                                                                                                                                                                                                                                                                                                                                                                       Matches 199; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                 Query Match
Best Local Similarity
                                                                                       mitosis or meiosis
                                                                                                                                                                                                                                                                                                                                                                                  Sequence 651 AA;
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                                                                                                                                                                                                                                                                                                                                               sequence.
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                                                                                                                                                                           The intention retails to displaying the presence/absence of an allele of a polymorphic marker in the DNA of a patient, where the polymorphic marker is within the chromosome segment 1q22 bordered by D1S2705, D1S1679 and linked to the DNA segment 1q22 bordered by D1S2705, D1S1679 and linked to the DNA segment SCZ having a variant form associated with phenotype of schizophrenia, where the allele is in phase with the variant form of SCZ and the presence of the allele is in phase with the variant schizophrenia. The method can be used for in utero screening of fetuses for the presence of a variant SCZ allele. Identification of such cariations offers the possibility of gene therapy and for couples known to be at risk of giving rise to an affected progeny, diagnosis can be combined with in vitro reproduction procedures to identify an embryo having wild-type SCZ alleles before implantation. Screening children shortly after birth allows administration of appropriate treatment at meanly stage of detection. The genetic tests provide a highly accurate saraly stage of detection. The genetic tests provide a highly accurate SCZ gene encodes a previously isolated sequence encoding human heat shock protein 70B (HSP70B, GenBank Accession Number NM002155)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    240
                                                                        Diagnosing susceptibility to schizophrenia comprises determining presence of allele of linked polymorphic marker on chromosome 1q22 and linked to variant form of SCZ gene associated with schizophrenia phenotype.
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    human; disease state; cytostatic; antiinflammatory; ophthalmological; antiarteriosclerotic; vulnerary; gene therapy; hypoxia-regulated condition; tumourigenesis; angiogenesis; apoptosis; inflammation; erythropoiesis; glycolysis; gluconeogenesis; glucose transportation; catecholamine synthesis; iron transport; nitric oxide synthesis; cancer; ischaemic condition; reperfusion injury;
                                                                                                                                                                invention relates to diagnosing susceptibility to schizophrenia in a
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         386 KCEKVQDLLLLDVAPLSLGLETAGGVMTTLIQRNATIPTKQTQTFTTYSDNQPGVF1QVY
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    33; Mismatches
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                                                                                                                                      Claim 20; Page 70; 83pp; English
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                              WPI; 2002-083121/11.
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Best Local Similarity
 Brzustowicz LM,
                                             N-PSDB; ABA96361
                                                                                                                                                                                                                                                                                                                                                                                                                                                           Sequence 643 AA;
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This invention relates to novel human genes and gene product which are implicated in certain disease states. Compounds which modulate the proteins of the invention may have cytostatic, antiinflammatory, ophthalmological, antiatreriosclerotic or vulnerary activities. The sequences of the invention may be useful for gene therapy. The invention may be useful for gene therapy. The invention may be useful for gene therapy. The invention may be useful for diagnosing or treating a hypoxia-regulated condition, erthropoiesis, angiogenesis, apoptosis, inflammation, erythropoiesis, or the biological response to hypoxia conditions including processes such as glycolysis, gluconeogenesis, glucose irransportation, catecholamine synthesis, iron transport or nitric oxide synthesis. The disease includes cancer, ischaemic conditions, reperfusion injury, retinopathy, neonatal stress, pre-eclampsia, atherosclerosis, a disease related protein of the invention.
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                New substantially purified polypeptide, useful for diagnosing or treating
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               hypoxia-regulated condition, such as cancer, ischemia, reperfusion njury, retinopathy, pre-eclampsia, atherosclerosis, inflammation, or
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Gaps
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retinopathy; neonatal stress; pre-eclampsia; atherosclerosis; inflammatory condition; wound healing.
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Harris RA,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Claim 25; SEQ ID NO 81; 424pp; English.
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                                                                                                                                                                                                                                                                                                                                                                        23-AUG-2001; 2001GB-00020558.
05-OCT-2001; 2001GB-00024037.
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Best Local Similarity 74.4
Matches 192; Conservative
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       WPI; 2003-290046/28.
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The present invention relates to diagnosing or monitoring transplant rejection, e.g. cardiac or kidney transplant rejection, in an individual comprises detecting the expression level of one or more genes. The methods, system and kits are useful in diagnosing or monitoring transplant rejection, e.g. heart, kidney, liver, pancreas, pancreatic islet, lung, bone marrow or stem cell transplant rejection, in an exent respection, respection or mechanical organ replacement rejection, in an individual. The methods are also useful in assessing the immune status of individual. The methods are also useful in diagnosing and monitoring diseases that involve the immune system, e.g. rheumatoid arthritis, lupus, inflammatory bowel diseases, multiple sclerosis, HIV/AIDS or viral, bacterial or fungal infection. The present sequence represents a protein encoded by an mRNA sequence of the invention which show altered expression in renal transplantation and expression.
EGERAMTKONNLLGRFELSGIPPAPRGVPQIEVTFDIDANGILNVTATDKSTGKANKITI 120
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Diagnosing or monitoring transplant rejection, e.g. heart, kidney, liver, pancreas, pancreatic islet, lung, bone marrow or stem cell transplant rejection, in an individual, comprises detecting the expression level of
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                                                                                                                                                                                                                                                                                                                                                                                                                                                              transplant rejection; immune system; rheumatoid arthritis; lupus; inflammatory bowel disease; multiple sclerosis; HIV; AIDS.
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                                                                                                                                                                                                                                                                                                                                                                                                               Protein encoding referenece mRNA sequence #32.
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20-DEC-2002; 2002US-00325899.
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626 TQARQGDPSTGPIIEEVD
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Matches 192; Conserv
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                The invention relates to a composition comprising several cDNAs that are differentially expressed in a liver disorder. The composition is useful for treating liver disorder such as hyperlajdaemia, hypertension, type II diabetes, tumours of the liver and disorders of the inflammatory and immune response. The composition is useful for a high-throughput method of streening several molecules or compounds to identify a ligand which specifically binds a CDNA. A protein encoded by the CDNA is useful for high-throughput method for using a protein to screen several molecules or compounds to identify at least one ligand which specifically binds the protein which involves combining the protein encoded by the CDNA with several of molecules or compound under conditions to allow specific binding, and detecting specific binding between the protein and a molecule or compound, therefore identifying a ligand which specifically binds the protein. The composition is useful for detecting and quantifying differential gene expression, can be used in gene therapy, to formulate prognosis and to design a treatment regimen and to monitor the efficacy of treatment. The present sequence represents the amino acid a gequence of a protein encoded by a CDNA differentially expressed in a
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Composition comprising several cDNAs that are differentially expressed in treated human C3A liver cell cultures, useful for treating liver
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    TNDKGRLSKEEVERMYHEAEQYKAEDEAQRDRVAAKNSLEAHVFHVKGSLQEESLRDKIP 565
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        181 EADKKKVLDKCQEVISWLDANTLAEKDEFEHKRKELEQVCNPIISGLYQGAGGPGFGFG 240
                                                                                                                                                                           human; liver disorder; hyperlipidaemia; hypertension; type II diabetes; tumour; liver; inflammatory disorder; immune response disorder; high-throughput screening; differential gene expression; gene therapy.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               KCEKVQDLLLLDVAPLSLGLETAGGVMTTLIQRNATIPTKQTQTFTTYSDNQPGVFIQVY
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                                                                                                                            Human protein expressed in a liver disorder #57
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           33; Mismatches
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                                                                                                                                                                                                                                                                                                                                                                                                                                       30-JUL-2001; 2001US-00919039
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      28-JUL-2000; 2000US-0222113P
                                                                            (first entry)
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N-PSDB; ADE77038.
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        (KASE/) KASER M R
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                                                                            29-JAN-2004
                                                                                                                                                                                                                                                                                     Homo sapiens
                                                                                                                                                                                                                                                                                                                                                                                    12-JUN-2003.
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WP-kappaB pathway; antiinflammatory; cytostatic; hepatotropic; virucide; antiarthritic; antirheumatic; gastrointestinal-Gen; antiasthmatic; antiarthritic; antiartherioscalerotic; immunomodulator; cerebroprotective; vasotropic; wantiarterioscalerotic; immunomodulator; cerebroprotective; vasotropic; immunosuppressive; vulnerary; gene therapy; immune disorder; motorder; modgkin's lymphoma; hematory disorder; modgkin's lymphoma; hematory cunour; hyper-IgM syndrome; hypohidrotic ectodermal dysplasia; x-linked anhidrotic ectodermal dysplasia; immunodeficiency; wiral infection; HIV-1; HTLV-1; hepatitis B; hepatitis C; BBV; influenza; viral infection; host cell survival; evasion of immune response; rehumatoid arthritis; inflammatory bowel disease; colitis; asthma; atherosclerosis; cachexia; euthyroid sick syndrome; stroke; BAB; aberrant acute phase response; hyper immune activity; aberrant acute phase response; hypercongenital condition; birth defect; mercrotic lesion; wound; organ transplant rejection;
                             TNDKGRLSKEEIERMVQEAEKYKAEDEVQRERVSAKNALESYAFNMKSAVEDEGLKGKIS 180
                                                                                                             EGERAMTKDNNLLGRFELSGIPPAPRGVPQIEVTFDIDANGILSVTATDRSTGKANKITI 505
                                               EADKKKVLDKCQEVISWLDANTLAEKDEFEHKRKELEQVCNPIISGLYQGAGGPGGFG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               aberrant signal transduction; proliferating disorder; cancer;
                                                                                                                                                                                                                                                                                                                                                             Human NF-kappaB pathway-associated protein SeqID396.
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                                                                                                                                                                                                                                                                   ADR14395 standard; protein; 643 AA.
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                                                                                                                                                         AQGPKGGSGSGPTIEEVD 258
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12-MAY-2003; 2003US-0469757P.
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This invention relates to the novel association of protein sequences (and the genes which encode them) to the NF-kappaB pathway. The invention may be useful for the production of compounds with an antiinflammatory, cytostatic, hepatotropic, virucide, antiarthritic, antirheumatic, gastrointestinal-Gen, antiarhamatic, antiarteriosclerotic, immunomodulator, cerebroprotective, vasotropic, immunosuppressive or

New isolated polynucleotides and polypeptides associated with NF-kappaB pathway, useful for diagnosing, treating, or preventing disorders or diseases associated with NF-kappaB pathway.

WPI; 2004-562168/54. N-PSDB; ADR14394.

Claim 6; SEQ ID NO 396; 237pp; English.

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useful for diagnosing, preventing, treating, or ameliorating conditions or diseases associated with the NF-kappaB pathway. The condition is an immune disorder, an inflammatory disorder, an inflammatory disorder. The condition is an immune disorder. The condition is an inflammatory disorder. The condition is an inflammatory disorder. The condition is an inflammatory disorder. The cancer, aberrant apoptosis, hepatic disorders, Hodgkin's lymphomas, haematopoietic tumours, hyper-IgM cetodermal dysplasia, immunodeficiency, viral infections, HIV-1, HTIV-1, hepatitis B, hepatitis C, EBV, influenza, viral replication, host cell cetodermal dysplasia, immunodeficiency, viral infections, HIV-1, HTIV-1, bowel disease, colitis, asthma, atherosclerosis, cachexia, euchyroid sick syndrome, stroke, EAE, autoimmune disorders, disorders related to aberrant acute phase responses, hypercongenital conditions, birth defects, necrotic lesions, wounds, organ transplant rejection, conditions related to organ transplant cefection, conditions related to organ transplant cefection, disorders related to aberrant signal transduction, rejection, disorders cancers and HIV propagation in cells infected with other viruses. The present sequence is that of a human protein which is subject to the novel association with the NF, kappaB pathway of the
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   121 TNDKGRLSKEEIERMVQEAEKYKAEDEVQRERVSAKNALESYAFNMKSAVEDEGLKGKIS 180
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activity or for gene therapy. The proteins and nucleotides are
                                                                                                                                                                                                                                                                                                                                                                                                                                                           invention. Note: This sequence does not appear in the specification but was obtained by the indexer from Genbank.
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Matches 192; Conservative
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Sequence 174, Appl
Sequence 14, Appl
Sequence 13, Appl
Sequence 7028, Ap
Sequence 817, Appl
Sequence 204, Appl
Sequence 3, Appl
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Sequence 47277, A
Sequence 16, Appl
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19789, A
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1 KSENVQDLLLLDVAPLSLGL......FGAQGPKGGSGSGPTIEEVD 258
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Copyright (c) 1993 - 2005 Compugen Ltd.
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GENERAL INFORMATION: APPLICANT: Kaser, Matthew R. TITLE OF INVENTION: GENES EXPRESSED IN TREATED HUMAN C3A LIVER CELL CULTURES FILE REPERENCE: PA-0035 US CURRENT APPLICATION NUMBER: US/09/919,039 CURRENT FILING DATE: 2002-09-09 PRIOR APPLICATION NUMBER: 60/222,113 PRIOR FILING DATE: 2000-07-28 NUMBER OF SEQ ID NOS: 401 SOFTWARE: PERL PROGram SEQ ID NO 11 LENGTH: 646 61 RFELSGIPPAPRGVPQIEVTFDIDANGILMVTATDKSTGKANKITITNDKGRLSKEEIER 120 121 MVQEAEKYKAEDEVQRERVSAKNALESYAFNMKSAVEDEGLKGKISEADKKKVLDKCQEV 180 15 PLSLGLETAGGVMTALIKRNSTIPTKQTQIFTTYSDNQPGVLIQVYEGERAMTKDNNLLG 1 PLSLGLETAGGVWTALIKRNSTIPTKQTQIFTTYSDNQPGVLIQVYEGERAMTKDNNLLG 75 RFELSGIPPAPRGVPQIEVTFDIDANGILNVTATDKSTGKANKITITNDKGRLSKEEIER 135 MVQEAEKYKAEDEVQRERVSAKNALESYAFNMKSAVEDEGLKGKISEADKKKVLDKCQEV 195 ISWLDANTLAEKDEFEHKRKELEQVCNPIISGLYQGAGGPGFGFGAQGPKGGSGSGPTI TYPE: PRT ORGANISM: Homo sapiens PERTURE: NAME/KSY: misc feature OTHER INFORMATION: Incyte ID No. 6727066 1545176CD1 US-09-919-039-11 ; Sequence 11, Application US/09919039 ; Patent No. 6727066 Best Local Similarity 100. Matches 244; Conservative 255 EEVD 258 241 EEVD 244 US-09-919-039-11 Query Match Query Match ò 유 ð 셤 ઠ 임 셤 ठ Š 셤 ð g ò Sequence 2, Application US/09440967 Sequence 2, Application US/09440967 Sequence 2, Application US/09440967 Sequence 2, Application US/09440967 GENERAL INC. 673032 TITLE OF INVENTION: INTRACELLUAR TARGETED DELIVERY OF COMPOUNDS BY 70 KD HEAT SHOCK TITLE OF INVENTION: INTRACELLUAR TARGETED DELIVERY OF COMPOUNDS BY 70 KD HEAT SHOCK TITLE OF INVENTION NUMBER: US/09/440,967 CURRENT FILING DATE: 1998-11-16 PRIOR FILING DATE: 1998-11-24 NUMBER OF SEQ ID NOS: 5 SOFTWARE: Patentin version 3.0 SEQ ID NO 2 LENGTH: 244 Patent No. 6727066 BARGALI INFORMATION: TITLE OF INVENTION: GENES EXPRESSED IN TREATED HUMAN C3A LIVER CELL CULTURES TITLE OF INVENTION: GENES EXPRESSED IN TREATED HUMAN C3A LIVER CELL CULTURES TILE REFERENCE: PA-0035 US CURRENT APPLICATION NUMBER: US/09/919,039 CURRENT PILING DATE: 2002-09-09 PRIOR PILING DATE: 2000-07-28 NUMBER OF SEQ ID NOS: 401 SOFTWARE: PERL PROGRAM SEQ ID NO 146 LENGTH: 641 443 EGERAMIKDNNLLGRFELSGIPPAPRGVPQIEVIFDIDANGILNVIAIDKSTGKANKITI 120 TNDKGRLSKEEIERWYQEAEKYKAEDEVQRERVSAKNALESYAFNMKSAVEDEGLKGKIS 180 EADKKKVLDKCQEVISWLDANTLAEKDEFEHKRKELEQVCNPIISGLYQGAGGPGGFG 240 EGERAMTKDNNLLGRFELSGIPPAPRGVPQIEVTFDIDANGILNVTATDKSTGKANKITI 503 384 KSENVQDLLLLDVAPLSLGLETAGGVMTALIKRNSTIPTKQTQIFTTYSDNQPGVLIQVY TNDKGRLSKEETERMVQEAEKYKAEDEVQRERVSAKNALESYAFNMKSAVEDEGLKGKIS 1 KSENVQDLLLLDVAPLSLGLETAGGVMTALIKRNSTIPTKQTQIFTTYSDNQPGVLIQVY Query Match 100.0%; Score 1314; DB 4; Length 641; Best Local Similarity 100.0%; Pred. No. 6.1e-113; Matches 258; Conservative 0; Mismatches 0; Indels 0 NAME/KEY: misc_feature OTHER INFORMATION: Incyte ID No. 6727066 1678695CD1 ALIGNMENTS AQGPKGGSGSGPTIEEVD 258 624 AQGPKGGSGSGPTIEEVD 641 TYPE: PRT ORGANISM: Homo sapiens JS-09-919-039-146 504 61 444 121 181 564 241 FEATURE 셤 8 유 a Š ð ð ò 셤

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83.5%; Score 1097.5; DB 4; Length 646; 81.4%; Pred. No. 6.5e-93; Live 24; Mismatches 20; Indels 5;
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                                                                                                                                                                                                                                                                                                                                                                                                               624 GPPGGAPPSGGASSGPTIEEVD 646
                     Best Local Similarity 81.4%
Matches 214; Conservative
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; TYPE: PRT ; ORGANISM: Homo Sapien US-09-440-967-2

5; Gaps

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121 TNDKGRLSKEEIERMVQEAEKYKAEDEVQRERVSAKNALESYAFNMKSAVEDEGLKGKIS 180
                                                                                                                                                                                                                                                     61 EGERAMTKONNLLGRFELSGIPPAPRGVPQIEVTFDIDANGILNVTATDKSTGKANKITI 120
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                                                                     1 KSENVQDLLLLDVAPLSLGLETAGGVMTALIKRNSTIPTKQTQIFTTYSDNQPGVLIQVY
                                             1 KSENVQDLLLLDVAPLSLGLETAGGVMTALIKRNSTIPTKQTQIFTTYSDNQPGVLIQVY
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APPLICANT: Robinson, Anne S.
TITLE OF INVENTION: METHODS FOR INCREASING SECRETION OF TITLE OF INVENTION: RECOMBINANTLY EXPRESSED PROTEINS NUMBER OF SEQUENCES: 20
CORRESPONDENCE ADDRESS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Indels
20; Indels
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CURRENT APPLICATION DATA:
APPLICATION NUMBER: US/08/441,139
FILING DATE: 15-MAY-1995
CLASSIFICATION NUMBER: US/08/441,139
FILING APPLICATION DATA:
APPLICATION NUMBER: US/08/089,997
FILING APPLICATION NUMBER: US 08/089,997
ATTORNEY/AGENT INFORMATION:
NAME: DiG:4Glio, Frank S.
REGISTRATION NUMBER: 31,346
REGISTRATION NUMBER: 31,346
TELEPHONE: 516-742-4343
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ADDRESSEE: SCULLY, SCOTT, MURPHY & PRESSER STREET: 400 Garden City Plaza CITY: Garden City STATE: NY
24; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                238 GF--GAQGPKGGSGSGPTIEEVD 258
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OPERATING SYSTEM: PC-DOS/MS-DOS
SOFTWARE: PatentIn Release #1.0.
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Patent No. 5773245
GENERAL INFORMATION:
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TELEX: 230 901 SANS UR
INFORMATION FOR SEQ ID NO:
  214; Conservative
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COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy
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Matches
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; Sequence 10605, Application US/09949016
; Sequence 10605, Application US/09949016
; Patent No. 6812339
; GENERAL INFORMATION:
TITLE OF INVENTION: POLYMORPHISMS IN KNOWN GENES ASSOCIATED
TITLE OF INVENTION: WITH HUMAN DISEASE, METHODS OF DETECTION AND USES THEREOF
; TILE BEFERENCE: CL001307
; CURRENT FILING DATE: 2000-04-14
; PRIOR APPLICATION NUMBER: 60/241,755
; PRIOR PAPLICATION NUMBER: 60/237,768
; PRIOR PAPLICATION NUMBER: 60/237,768
; PRIOR PLING DATE: 2000-10-03
; PRIOR FILING DATE: 2000-10-03
; PRIOR FILING DATE: 2000-09-08
; NUMBER OF SEQ ID NOS: 207012
; SOFTHARE: FRAESEQ for Windows Version 4.0
; SEQ ID NO 10605
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                EGERAMTKONNLLGKPELTGIPPAPRGVPQIEVTFDIDANGILNVSAVDKSTGKENKIII 747
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US-09-513-783A-174
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                                 Sequence 174, Application US/09513783A

Patent No. 6416959
GENERAL INPORMATION:
APPLICANT: Giuliano, Kenneth A.
TITLE OF INVENTION:
FILE REFERENCE: 97-022-11
CURRENT APPLICATION NUMBER: US/09/513,783A
CURRENT PILING DATE: 2000-02-25
NUMBER OF SEQ ID NOS: 180
SOFTWARE: Patentin Ver. 2.0
SEQ ID NO 174
LENGTH: 890
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Pred. No. 1e-92;
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81.4%;
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ORGANISM: Artificial Sequence
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Best Local Similarity
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; ORGANISM: Human
US-09-949-016-10605
                     09-513-783A-174
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APPLICANT: VENTER, J. Craig et al
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US-09-949-016-8177
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US-09-919-039-73
US-09-919-039-73
US-09-919-039-73
Sequence 73, Application US/09919039
Patent No. 6727066
GENERAL INFORMATION:
APPLICANT: Kaser, Matthew R.
TITLE OF INVENTION: GENES EXPRESSED IN TREATED HUMAN C3A LIVER CELL CULTURES FILE REFERENCE: PA-0035 US
CURRENT APPLICATION NUMBER: US/09/919,039
CURRENT FILING DATE: 2002-09-09
PRIOR APPLICATION NUMBER: 60/222,113
PRIOR PILING DATE: 2000-07-28
NUMBER OF SEQ ID NOS: 401
SOCTIVARE: PERL PROGRAM
SEQ ID NO 73
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     TNDKGRLSKEEIERMVQEAEKYKAEDEVQRERVSAKNALESYAFNMKSAVEDEGLKGKIS 180
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                                                                                                      INDKGRLSKEEIERMVQEAEKYKAEDEVQRERVSAKNALESYAFNMKSAVEDEGLKGKIS 180
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                                                             EADKKKVLDKCQEVISWLDANTLAEKDEFEHKRKELEQVCNPIISGLYQGAGG-PG-PG 237
1 KSENVQDILLLDVAPLSIGLETAGGVMTALIKRNSTIPTKQTQIFTTYSDNQPGVLIQVY
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ; NAME/KEY: misc feature
; OTHER INFORMATION: Incyte ID No. 6727066 701484CD1
US-09-919-039-73
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      617 CTGPACGTGYVPGRPATGPTIEEVD 641
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Sequence 7028, Application US/09949016
; Patent No. 6812339
; GENERAL INFORMATION:
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ORGANISM: Homo sapiens
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Best Local Similarity
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US-09-949-016-8177

| Sequence 8177
| Sequence 8177
| Sequence 8177
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| Sequence 8178
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| Sequence 8178
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| Sequence 8178
| TILE NOTE OF INVENTION: WITH HUMAN DISEASE, METHODS OF DETECTION AND USES THEREOF TILE REFERENCE: CLO01307
| CURRENT FILING DATE: 2000-04-14
| PRIOR FILING DATE: 2000-04-14
| PRIOR FILING DATE: 2000-10-20
| PRIOR PILING DATE: 2000-10-20
| PRIOR PILING DATE: 2000-10-03
| PRIOR PILING DATE: 2000-09-08
| NUMBER OF SEQ ID NOS: 207012
| SOFTMARE: FasteSEQ for Windows Version 4.0
| SERO ID NO 8177
| LENGTH: 664
| TYPE PRI
TITLE OF INVENTION: POLYMORPHISMS IN KNOWN GENES ASSOCIATED
TITLE OF INVENTION: WITH HUMAN DISEASE, METHODS OF DETECTION AND USES THEREOF
TITLE OF INVENTION: WITH HUMAN DISEASE, METHODS OF DETECTION AND USES THEREOF
CURRENT APPLICATION NUMBER: US/09/949,016
CURRENT FILING DATE: 2000-04-14
PRIOR FILING DATE: 2000-10-20
PRIOR PELLING DATE: 2000-10-03
PRIOR PELLING DATE: 2000-10-03
PRIOR APPLICATION NUMBER: 60/237,768
PRIOR APPLICATION NUMBER: 60/237,768
PRIOR APPLICATION NUMBER: 60/231,498
PRIOR APPLICATION NUMBER: 60/231,498
PRIOR PILING DATE: 2000-09-08
NUMBER OF SEQ ID NOS: 207012
SOFTWARE: PASSEQ for Windows Version 4.0
SEQ ID NO 7028
LENGTH: 639
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                           DB 4;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                              80.6%; Score 1059.5; DB 79.1%; Pred. No. 2.1e-89;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Query Match
Best Local Similarity 79.1%; Pred. No. 2.1e-6
Matches 204; Conservative 24; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  627 S----GASGGPTIEEVD 639
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                                                                                                                                                                                                                                                                                                                                                                                    TYPE: PRT
ORGANISM: Human
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Best Local
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Patent No. 6727066

GENERAL INFORMATION:
APPLICANT: Kaser, Matthew R.
TITLE OF INVENTION: GENES EXPRESSED IN TREATED HUMAN C3A LIVER CELL CULTURES FILE REFERENCE: PA-0035 US
CURRENT APPLICATION NUMBER: US/09/919,039

CURRENT APPLICATION NUMBER: 60/222,113

PRIOR FILING DATE: 2000-07-28

NUMBER OF SEQ ID NOS: 401

SOFTWARE: PERL Program

SEQ ID NO 204

LENGTH: 643
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TNDKGRLSKERIERMVQEAEKYKAEDEVQRERVSAKNALESYAFNMKSAVEDEGLKGKIS 180
                                                                                                                                    TNDKGRLSKDDIDRWVQEAERYKSEDEANRDRVAAKNALESYTYNIKQTVEDEKLRGKIS 591
                                                                                                                                                                                     EADKKKVLDKCQEVISWLDANTLAEKDEFEHKRKELEQVCNPIISGLYQGAGGPGGFG 240
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                                              ECERAMTKDNNLLGRFELSGIPPAPRGVPQIEVTFDIDANGILNVTATDKSTGKANKITI 120
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ; NAME/KEY: misc feature
; OTHER INFORMATION: Incyte ID No. 6727066 1440032CD1
US-09-919-039-204
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US-08-797-358B-3
; Sequence 3, Application US/08797358B
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652 S----GASGGPTIEEVD 664
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Patent No. 6268478
GENERAL INFORMATION:
APPLICANT: Adams, John
TITLE OF INVENTION: INTRACELLULAR VITAMIN D BINDING PROTEIN
NUMBER OF SEQUENCES: 9
CORRESPONDENCE ADDRESS:
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                                                                                                                                                                                                                                                                           COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy disk
COMPUTER: IBM PC compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
SOFTWARE: PatentIn Release #1.0, Version #1.25
                                                                                                                                                    ADDRESSEE: Campbell & Flores LLP
STREET: 4370 La Jolla Village Drive, Suite 700
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 APPLICATION NUMBER: US 60/011,491
FILING DATE: 12-FEB-196
ATTORNEY/AGENT INFORMATION:
NAME: Campbell, Cathryn A.
REGISTRATION NUMBER: 31,815
FELECOMMUNICATION INFORMATION:
TELEPHONE: (619) 535-901
                                                                                                                                                                                                                                                                                                                                                                                                                                                          APPLICATION NUMBER: US/08/797,358B FILING DATE: 11-Feb-1997 CLASSIFICATION: <Unknown>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Query Match 76.8%; Score 1009; Di
Best Local Similarity 74.4%; Pred. No. 9.8e<sup>-</sup>
Matches 192; Conservative 34; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ; SEQUENCE DESCRIPTION: SEQ ID NO: 3: US-08-797-3588-3
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  LENGTH: 643 amino acids
TYPE: amino acid
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                                                                                                                                                                                                    CITY: San Diego
STATE: California
COUNTRY: United States
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        241 AQGPKGGSGSGPTIEEVD 258
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                                                                                                                                                                                                                                                                                                                                                                                                                                     CURRENT APPLICATION DATA:
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    PRIOR APPLICATION DATA:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  INFORMATION FOR SEQ ID NO: 3
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         MOLECULE
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US-08-257-073-7
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Application US/09270767
                                                                                                                                                                                                                                                      Best Local Similarity
Matches 156; Conserv
                  Patent No. 6703491
GENERAL INFORMATION:
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               SEQ ID NO 47277
LENGTH: 312
    Sequence 32060,
                                                                                                                                                                                                                                             Query Match
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        61 EGERAMTKDNNLLGRFELSGIPPAPRGVPQIEVTFDIDANGILNVTATDKSTGKANKITI 120
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      31 QSNAVQDLLLLDVCSLSLGLETAGGVMTKLIERNTTIPAKKSQIFTTYADNQPGVLIQVY 90
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      1 KSENVQDLILLDVAPLSLGLETAGGVMTALIKRNSTIPTKQTQIFTTYSDNQPGVLIQVY
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Gabs
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           271 GMPGGMPGGMPGGMNFPGGMPGAGMPGAGAPAGSGPTVEEVD 315
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                 TITLE OF INVENTION: MALARIA RECOMBINANT POXVIRUS VACCINÉ WIMBER OF SEQUENCES:
CORRESPONDENCE ADDRESS:
ADDRESSEE: Curtis, Morris & Safford, P.C.
                                                                                                                                                                                       48;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           65.8%; Score 864.5; DB 1.
60.7%; Pred. No. 8.3e-72;
tive 37; Mismatches 48
                                                         SSEE: Curtis, Morris & Safford, P.C. F: 530 Fifth Avenue, 25th Floor New York
                                                                                                                                                                                                                                                 APPLICATION NOTICE.

FILING DATE:
CLASSIFICATION: 424
PRIOR APPLICATION DATA:
APPLICATION NUMBER: US 08/075,783
FILING DATE: 11-UTN-1993
PRIOR APPLICATION DATA:
APPLICATION NUMBER: US 07/852,305
FILING DATE: 18-MAR-1992
PRIOR APPLICATION DATA:
APPLICATION NUMBER: US 07/872,183
FILING DATE: 20-MAR-1991
ATTORNEY/AGENT INFORMATION:
NAME: Frommer, William S.
REFERENCE/DOCKEY NUMBER: 454110-2570
TELECOMMUNICATION INFORMATION:
TELEFONDE: (212) 840-3333
TELEFONDE: (212) 840-0712
TELERAX: 42506 CURTMS
INFORMATION FOR SEQ ID NO: 7:
SEQUENCE CHARACTERISTICS:
SEQUENCE CHARACTERISTICS:
                                                                                                                    RY: UNITED STATES OF AMERICA 10036
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           LENGTH: 315 amino acids
TYPE: amino acid
STRANDEDNESS: single
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Best Local Similarity 60.77
Matches 173; Conservative
       Tine, John A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 MOLECULE TYPE: peptide FRAGMENT TYPE: internal
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                                                                                                           STATE: Ne
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                                                                               STREET:
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RESULT 13 US-09-270-767-32060

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EGERAMTKDNNLLGRFELSGIPPAPRGVPQIEVTFDIDANGILNVTATDKSTGKANKITI 120
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APPLICANT: Homburger et al.
TITLE OF INVENTION: Nuclei acids and proteins of Drosophila melanogaster
TITLE OF INVENTION: Nuclei acids and proteins of Drosophila melanogaster
FILE REFERENCE: File Reference: 7326-034
CURRENT FILING DARE: 199-03-17
CURRENT FILING DARE: 199-03-17
SOFTWARE: Patentin Ver. 2.0
                          proteins of Drosophila melanogaster
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                                                                                                                                                                                                                                                                                          62.7%; Score 824; DB 4;
ilarity 59.5%; Pred. No. 4.5e-68;
Conservative 49; Mismatches
APPLICANT: Homburger et al.
TITLE OF INVENTION: Nucleic acids and proteir PILE REFERENCE: File Reference: 7326-094
CURRENT APPLICATION NUMBER: US/09/270,767
CURRENT FILING DATE: 1999-03-17
NUMBER OF SEQ ID NOS: 62517
SOFTWARE: PatentIn Ver. 2.0
SEQ ID NO 32060
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                                                                                                                                                                                                                                ; ORGANISM: Drosophila melanogaster US-09-270-767-32060
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481 ERPLTKONHLLGTFDLTGIPPAPAPRGVPQIEVTPEIDVNGILRVTAEDKGTGNKNKITITN 540
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| Patent No. 5773245
| GENERAL INFORMATION: |
| APPLICANT: Witterly, Dr. Karl D. |
| APPLICANT: Witterly, Dr. Karl D. |
| APPLICANT: Witterly, Dr. Karl D. |
| TITLE OF INVENTION: METHODS FOR INCREASING SECRETION OF TITLE OF INVENTION: METHODS FOR INCREASING SCRETION OF TITLE OF INVENTION: RECOMBINANTLY EXPRESSED PROTEINS NUMBER OF SEQUENCES: 20 CORRESPONDENCE ADDRESSES: SCULLY, SCOTT, MURPHY & PRESSER |
| STREET: 400 Garden City Plaza |
| COUNTRY: USA |
| CO
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Query Match 55.1%; Score 724; DB 1; Length 666; Best Local Similarity 59.5%; Pred. No. 2.3e-58; Matches 141; Conservative 44; Mismatches 50; Indels
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CURRENT APPLICATION DATA:
FILING DATE: US/08/441,139
FILING DATE: 15-MAY-1995
CLASSIFICATION: 435
PRIOR APPLICATION DATA:
APPLICATION DATA:
                                        APPLICATION NUMBER: US/08/441,139
FILING DATE: 15-MAY-1995
CLASSIPICATION: 435
PRIOR APPLICATION DATA:
APPLICATION NUMBER: US 08/089,997
FILING DATE: 06-UL-1993
ATTORNEY/AGENT INFORMATION:
NAMME: DIGIGIA, Frank S.
REGISTRATION NUMBER: 31,346
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TELEPHONE: 516-742-4343
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            REFERENCE/DOCKET NUMBER:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       666 amino acids
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TELEX: 230 901 SANS UR
INFORMATION FOR SEQ ID NO:
SEQUENCE CHARACTERISTICS:
CURRENT APPLICATION DATA: APPLICATION NUMBER: US
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STRANDEDNESS: si
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Sequence 36, Application US/09632538C

GENERAL INFORMATION:

TITLE OF INVENTION: PLANT PROMOTER DERIVED FROM LUMINAL BINDING PROTEIN GENE AND METH
TITLE OF INVENTION: 1TS USB
TITLE OF INVENTION: 1TS USB
TITLE REPERENCE: 54359
CURRENT APPLICATION NUMBER: US/09/632,538C
CURRENT PILING DATE: 2000-08-04
NUMBER OF SEQ ID NOS: 37
SOFTWARE: Patentin Ver. 2.1
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                                                                                                    181 BADKKKVLDKCQEVISWLDANTLAEKDEFEHKRKELEQVCNPIISGLYQGAGGFGFGFG 240
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; Sequence 16 Application US/08441139
; Patent No. 5773245
; GENERAL INFORMATION:
APPLICANT: Mittrup, Dr. Karl D.
APPLICANT: Mittrup, Dr. Karl D.
TITLE OF INVENTION: METHODS FOR INCREASING SECRETION OF
TITLE OF INVENTION: RECOMBINANTLY EXPRESSED PROTEINS
INDRESSES SEQUENCES: 20
CORRESPONDENCES: 20
CORRESPONDE
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MEDIUM TYPE: Floppy disk
COMPUTER: IBM PC compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
SOFTWARE: PatentIn Release #1.0, Version #1.25
                                                                                                                                                                                                                                                                                             241 AQGP----KGGSGSGPTIEEVD 258
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ORGANISM: Pseudotsuga menziesii
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US-09-632-538C-36
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US-08-441-139-16
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US-09-919-039-260
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                                                                                                                                                                                                                                                                                               54.6%; Score 717; DB 1; Length 654;
59.1%; Pred. No. 1e-57;
iive 44; Mismatches 51; Indels
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OTHER INFORMATION: Incyte ID No. 6673545 2993696CD1
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APPLICANT: Faris, Mary
APPLICANT: Turner, Christopher M.
TILLE OF INTENTION: PROSTATE CANCER MARKERS
FILE REFERENCE: PA-0036 US
CURRENT APPLICATION NUMBER: US/09/919,172
CURRENT PILING DATE: 2001-07-30
PRIOR RAPLICATION NUMBER: 60/22,469
PRIOR PILING DATE: 2000-07-28
NUMBER OF SEQ ID NOS: 102
SOFTHARE: PERL PROGram
SEQ ID NO 54
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US-09-919-172-54
Sequence 54, Application US/09919172
Patent No. 6673545
                                                             REFERENCE/DOCKET NUMBER: 8646
TELECOMMUNICATION:
TELEPHONE: 516-742-4343
FILING DATE: 06-JUL-1993
ATTONERY AGENT INFORMATION:
NAME: DiGiglio, Frank S.
REGISTRATION NUMBER: 31,346
                                                                                                                                                                                  LENGTH: 654 amino acids
TYPE: amino acid
STRANDEDNESS: single
                                                                                                                TELEFAX: 516-742-4366
TELEX: 230 901 SANS UR
INFORMATION FOR SEQ ID NO:
SEQUENCE CHARACTERISTICS:
                                                                                                                                                                                                                                                                                                                                     Conservative
                                                                                                                                                                                                                                                , MOLECULE TYPE: protein US-08-441-139-11
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ORGANISM: Homo sapiens
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                                                                                                                                                                                                                                     linear
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Best Local S
Matches 140
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US-09-248-796A-19789
US-09-248-796A-19789
Sequence 19789, Application US/09248796A
Sequence 19789, Application US/09248796A
Sequence 19789, Application US/09248796A
Sequence 19789, Application US/09248796A
Sequence 19789, Application US-09-08-13
TITLE OF INVENTION: POR DIAGNOSTICS AND THERAPEUTICS
TITLE OF INVENTION: POR DIAGNOSTICS AND THERAPEUTICS
FILE REFERENCE: 107196.132
CURRENT APPLICATION NUMBER: US-09-02-12
PRIOR APPLICATION NUMBER: US-00-13
PRIOR FILING DATE: 1998-02-13
PRIOR FILING DATE: 1998-02-13
PRIOR FILING DATE: 1998-08-13
NUMBER OF SEQ ID NOS: 28208
SEQ ID NO 19789
LENGTH: 692
                                                                                                                                                                                                                                                                                                                                                           APPLICANT: KASE, MAILHEW R.
APPLICANT: KASE, MAILHEW R.
TITLE OF INVENTION: GENES EXPRESSED IN TREATED HUMAN C3A LIVER CELL CULTURES FILE REFERENCE: PA-0035 US
CURRENT APPLICATION NUMBER: US/09/919,039
CURRENT FILING DATE: 2002-09-09
PRIOR PILING DATE: 2000-07-28
NUMBER: OF SEQ ID NOS: 401
SOFTWARE: PERL PROGRAM
SEQ ID NO 260
LENGTH: 654
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 63 BRAMTKDNNLLGRFELSGIPPAPRGVPQIEVTFDIDANGILNVTATDKSTGKANKITITN 122
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      DKGRLSKREIBRMVQEAEKYKAEDEVQRERVSAKNALESYAFNMKSAVED-EGLKGKISE 181
469 ERPLIKDNHLLGIFDLIGIPPAPRGVPQIEVTFEIDVNGILRVTAEDKGIGNKNKITIIN 528
                                                                        62
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                                                                                                                                                                3 ENVODILLIDVAPLSIGLETAGGVMTALIKRNSTIPTKQTQIFTTYSDNQPGVLIQVYEG
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     NAME/KEY: misc feature
; OTHER INFORMATION: Incyte ID No. 6727066 2993696CD1
US-09-919-039-260
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             44; Mismatches
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Patent No. 6727066
GENERAL INFORMATION:
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Best Local Similarity 59.1%
Matches 140; Conservative
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RESULT 23
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                                                                                                                                     493 ERIMAKDNIRLGKFELTGIPPAPRGVPQIEVIPSLDANGILKVEAADKGTGKSESITIIN 552
                                                                                                                                                                                                                                                                           613 DDDXKETLDDAIKETLEFIEDNFDTATAEEFEEGKQKLIDVANPITAKUYGGAAGEGAGG 672
                                                                                                                                                                                       ERAMTKDNNLLGRPELSGIPPAPRGVPQIEVTFDIDANGILNVTATDKSTGKANKITITN 122
                                                                                                                                                                                                                                                          DKGRLSKEEIERMVQEAEKYKAEDEVQRERVSAKNALESYAFNMKSAVED---EGLKGKI 179
                                                                                                                                                                                                                                                                                                                            180 SEADKKKVLDKCQEVISWLDAN-TLAEKDEFEHKRKELEQVCNPIISGLÝQGAGGPGPGG 238
                                                                                                                     3 ENVQDLLLLDVAPLSLGLETAGGVMTALIKRNSTIPTKQTQIFTTYSDNQPGVLIQVYEG
                                                                                   Gaps
                                                                                     4
                                                   Length 692;
                                                Query Match . 54.5%; Score 716; DB 4; Length 69; Best Local Similarity 57.9%; Pred. No. 1.3e-57; Matches 140; Conservative 44; Mismatches 54; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Sequence 2, Application US/08441139
| Patent No. 577345
| GENERAL INPORMATION:
| APPLICANT: Mittrup, Dr. Karl D. APPLICANT: Robinson, Anne S. TITLE OF INVENTION: METHODS FOR INCREASING SECRETION OF TITLE OF INVENTION: RECOMBINANTLY EXPRESSED PROTEINS NUMBER OF SEQUENCES: 20
| CORRESPONDENCE ADDRESS: ADDRESSEE: 400 Garden City Plaza
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               CONDITY: USA

COUNTRY: USA

ZIP: 11530

COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy disk
COMPUTER: IBM PC compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
SOFTWARE: PatentIn Release #1.0, Version #1.25
CURRENT APPLICATION DATA:
APPLICATION NUMBER: US/08/441,139
PTIING DATE: 15-NAX-1995
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 STATE: NY
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  FILING DATE: 15-MAY-1995
CLASSIFICATION: 435
PRIOR APPLICATION DATA:
APPLICATION NUMBER: US 08/089,997
FILING DATE: 06-JUL-1993
ATTORNEY/AGENT INFORMATION:
NAME: DIGIGILO, Frank S:
RGISTRATION NUMBER: 31,346
REFERENCE/DOCKET NUMBER: 8646
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        TELECOMMUNICATION INFORMATION:
TELEPHONE: 516-742-4343
TELEFAX: 516-742-4366
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               : 682 amino acids
amino acid
: Candida albicans
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               SEQUENCE CHARACTERISTICS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            TELEX: 230 901 SANS UNINFORMATION FOR SEQ ID NO:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 MOLECULE TYPE: protein US-08-441-139-2
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; ORGANISM: Candida
US-09-248-796A-19789
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US-08-441-139-2
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FOR INDUCING APOPTOSIS BY INTERPERING WITH
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                                                                                                                                                                                                                                                                                                                                                                   549 DKGRLTQERIDRMVEBAEKFASEDASIKAKVESRNKLENYAHSLKNQVNGD-LGEKLEER 607
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     Length 682;
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                                                         53; Indels
Query Match
Best Local Similarity 58.8%; Pred. No. 1.4e-56;
Matches 140; Conservative 43; Mismatches 53
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Sequence 8, Application US/09581001B
Fatent No. 6472142
GENERAL INFORMATION:
APPLICANT: No. 6472142eborn, Mathieu
APPLICANT: No. 6472142eborn, Mathieu
APPLICANT: No. 6472142eborn, Mathieu
APPLICANT: Danan-Van Oorschot, Aerid
TITLE OF INVENTION: METHODS AND MEANS FOR INDU
TITLE OF INVENTION: BIP-LIKE PROTEINS
FILE REFERENCE: 2966-44940US
CURRENT APPLICATION NUMBER: US/09/581,001B
CURRENT APPLICATION NUMBER: PT/NL98/00688
FRIOR APPLICATION NUMBER: EP 97203783.2
FRIOR APPLICATION NUMBER: EP 97203783.2
FRIOR APPLICATION NUMBER: EP 97203783.2
FRIOR SEUING DATE: 19997-12-03
NUMBER OF SEQ ID NOS: 23
SOFTWARE: PatentIn version 3.1
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                TYPE: PRT
ORGANISM: Homo sapiens
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US-08-441-139-5
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Patent No. 5773245
REBRAL INFORMATION
RAPLICANT: Wittrup, Dr. Karl D.
APPLICANT: Robinson, Anne S.
TITLE OF INVENTION: METHODS FOR INCREASING SECRETION OF TITLE OF INVENTION: RECOMBINANTLY EXPRESSED PROTEINS NUMBER OF SEQUENCES: 20
CORRESPONDENCE ADDRESS: ADDRESSE: ADDRESSEE: ACULLY, SCOTT, MURPHY & PRESSER
STREET: 400 Garden City Plaza
APPLICANT: Robinson, Anne S.
TITLE OF INVENTION: METHODS FOR INCREASING SECRETION OF TITLE OF INVENTION: RECOMBINANTLY EXPRESSED PROTEINS NUMBER OF SEQUENCES: 20 CORRESPONDENCE ADDRESSE: SCULLY, SCOTT, MURPHY & PRESSER STREET: 400 Garden City Plaza CITY: Garden City
STATE: NY
                                                                                                                                                                                                                                                                                                   STATE:
COUNTRY: USA
COUNTRY: USA
COUNTRY: USA
COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy disk
COMPUTER: IBM PC COMPACING-DOS
OPERATING SYSTEM: PC-DOS/MS-DOS
SOFTWARE: PARENTIN Release #1.0, Version #1.25
CURRENT APPLICATION DATA:
APPLICATION NUMBER: US/08/441,139
FILING DATE: 15-MAY-1995
CLASSIFICATION: 435
PRIOR APPLICATION HASE: US 08/089,997
FILING DATE: 06-UUL-1993
ATTORNEY/AGENT INFORMATION:
NAME: DIGIGIAIO, FRANK S.
REFERENCE/DOCKET NUMBER: 31,346
REFERENCE/DOCKET NUMBER: 31,346
TELECOMMUNICATION INMBER: 31,346
TELE
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TELEX: 230 901 SANS UR
INFORMATION FOR SEQ 1D NO: 7:
SEQUENCE CHARACTERISTICS:
LENGTH: 663 amino acids
TXPE: amino acid
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Best Local Similarity 57.77
Matches 135; Conservative
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; MOLECULE TYPE: protein
US-08-441-139-7
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US-09-902-540-13248

US-09-902-540-13248

Sequence 13248, Application US/09902540

Patent No. 6833447

GENERAL INFORMATION:
APPLICANT: Hinkle, Gregory J.
APPLICANT: Wiegand, Roger C.
TITLE OF INVENTION: Myxococcus xanthus Genome Sequences and Uses Thereof TILE OF INVENTION: Wingsand, ROGER C.
PILE REFERENCE: 38-10(15849)B

CURRENT FILING DATE: 2001-07-10

PRIOR APPLICATION NUMBER: 60/217,883

PRIOR APPLICATION NUMBER: 60/217,883

SEQ ID NO 13248

LENGHH: 430

LENGHH: 430

LENGHH: 430
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         63 ERAMTKDINILIGRFELSGIPPAPRGVPQIEVTFDIDANGILINVTATDKSTGKANKITITN 122
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            3 ENVQDLLLLDVAPLSLGLETAGGVMTALIKRNSTIPTKQTQIFTTYSDNQPGVLIQVYEG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            48.2%; Score 634; DB 1; Length 679;
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~heg 68; Indels
                                                                                                                                                                               COMPUTER KEALABLE FURNE

COMPUTER: IBM PC compatible

COMPUTER: IBM PC compatible

COMPUTER: IBM PC compatible

COMPUTER: Patentin Release #1.0, Version #1.25

SOFTWARE: Patentin Release #1.0, Version #1.25

CURRENT APPLICATION DATA:

APPLICATION NUMBER: US/08/441,139

FILING APPLICATION 1435

PRING APPLICATION NUMBER: US/08/997

FILING DATE: 06-JUL-1993

ATTONENY/AGENT INPOMBER: 31,346

REGISTRATION NUMBER: 31,346

REGISTRATION NUMBER: 8646

TELEPHONE: 516-742-4336

TELEFAX: 516-742-4366

TELEFAX: 516-742-9366

TELEFAX: 519-742-7366

TELEFAX: 5
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tive 37; Mismatches
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Best Local Similarity 55.04
Matches 131; Conservative
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Garden City
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US-09-501-097A-20
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                                                                                                                                         GRLSKEEIERMVQEAEKYKAEDEVQRERVSAKNALESYAFN----MKSAVEDEGLKGKIS 180
                                                                                                                                                                                                                                                                                                                                    182 ADKKKVLDKCQEVISWLDANTLAEKDEFEHKRKELEQVCNPIISGLYQGAGG-PGPGGFG 240
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              EADKKKVLDKCQEVISWLDANTL-AEKDEFEHKRKE---LEQVCNPIISGLYQGAGGPGP 236
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                                                                                                                                                                                            GERAMTKDNNLLGRFELSGIPPAPRGVPQIEVTFDIDANGILNVTATDKSTGKANKITIT 121
                                                                                                                                                                                                                                                             122 NDKGRLSKEEIERMVQEAEKYKAEDEVQRERVSAKNALESYAFNMKSAVEDEGLKGKISE 181
                                                                                                                                                                                                                                                                                                                                                                  347 DTAKALEDAVAELNKVRDGQ----DKDAIKTALDALQAASYKAAEEMYRATGGAPGAEGAP 403
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        AMTKDNNLLGRFELSGIPPAPRGVPQIBVTFDIDANGILNVTATDKSTGKANKITITNDK 124
                                                                                                                       2 SENVODILLIDVAPLSIGLETAGGVMTALIKRNSTIPTKOTQIFTTYSDNQPGVLIQVYE 61
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   5 VQDLLLLDVAPLSLGLETAGGVMTALIKRNSTIPTKQTQIFTTYSDNQPGVLIQVYEGER
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                                                                                      7;
                                                      Length 430;
                                                                                      Indels
                                                  Query Match
40.8%; Score 536.5; DB 4;
Best Local Similarity 46.1%; Pred. No. 2.7e-41;
Matches 119; Conservative 43; Mismatches 89;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            APPLICANT: Tzyy-Choou Wu
APPLICANT: Chien-Fu Hung
TITLE OF INVENTION: IMPROVED HSP DNA VACCINES
FILE REFERENCE: 2240-169349
CURRENT APPLICATION NUMBER: US/09/501,097A
CURRENT FILING DATE: 2000-02-09
NUMBER OF SEQ ID NOS: 25
SOFTWARE: FastSEQ for Windows Version 4.0
SEQ ID NO 9
LENGTH: 625
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ; TYPE: PRT
; ORGANISM: Mycobacterium tuberculosis
US-09-501-097A-9
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Sequence 9, Application US/09501097A Patent No. 6734173
                                                                                                                                                                                                                                                                                                                                                                                                       241 AQGPKGGSGSGPTIEEVD 258
                                                                                                                                                                                                                                                                                                                                                                                                                                       404 GAĞPSAAPGSQASAKKOD 421
j ORGANISM: Myxococcus xanthus
US-09-902-540-13248
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RESULT 27

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458 VKDVLLLDVTPLSLGIETKGGVMTRLIERNTTIPTKRSETFTTADDNQPSVQIQVYQGER 517
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APPLICANT: Siegel, Marvin
APPLICANT: Mizzen, Lee A.
TITLE OF INVENTION: INDUCTION OF A TH1-LIKE RESPONSE IN VITRO
TITLE OF INVENTION: INDUCTION OF A TH1-LIKE RESPONSE IN VITRO
FILE REFERENCE: 12071/00201
CURRENT APPLICATION NUMBER: US/09/613,303
CURRENT PILING DATE: 1999-07-08
NUMBER OF SEQ ID NOS: 55
SOFTWARE: FastSEQ for Windows Version 4.0
SEQ ID NO 45
LENGTH: 724
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                                                                                                                                                                                                                                                                                                                                                                                                                                                            Length 723;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Length 724;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Indels
                                                                                                                                                                                                                                                                                                                                                  ; TYPE: PRT
; ORGANISM: human papillomavirus/Mycobacterium tuberculosis
US-09-501-097A-20
                                                                                                                                                                                                                                                                                                                                                                                                                                                         Query Match 40.4%; Score 531.5; DB 4; Best Local Similarity 47.7%; Pred. No. 1.6e-40; Matches 125; Conservative 32; Mismatches 90;
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Best Local Similarity 47.7%; Pred. No. 1.6e-40;
Matches 125; Conservative 32; Mismatches 90
                                                                        APPLICANT: Tzyy-Choou Wu
APPLICANT: Chien-Fu Hung
TITLE OF INVENTION: IMPROVED HSP DNA VACCINES
FILE REFERENCE: 2240-169349
CURRENT APPLICATION NUMBER: US/09/501,097A
CURRENT FILING DATE: 2000-02-09
NUMBER OF SEQ ID NOS: 25
SOFTWARE: FastSEQ for Windows Version 4.0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       237 GGFGAQGPKGGSGSGPTIEEVD 258
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Sequence 20, Application US/09501097A
Patent No. 6734173
GENERAL INFORMATION:
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Best Local Similarity
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GENERAL INFORMATION:
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                                                                                                                                                                                                                                                                                             SEQ ID NO 20
LENGTH: 723
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HILLE OF INVENTION: CONTRIBEACTERIUM GIUTAMICUM GENES ENCODING STRESS,
TITLE OF INVENTION: RESISTANCE AND TOLERANCE PROTEINS
TITLE OF INVENTION: RESISTANCE AND TOLERANCE PROTEINS
FILE REFERENCE: BG1-124CP
CURRENT APPLICATION NUMBER: US/09/603,208A
CURRENT FILING DATE: 1999-06-23
PRIOR FILING DATE: 1999-06-21
PRIOR PILING DATE: 1999-06-21
PRIOR PILING DATE: 1999-07-01
PRIOR PILING DATE: 1999-07-06
PRIOR PILING DATE: 1999-07-08
PRIOR PILING DATE: 1999-07-08
PRIOR PILING DATE: 1999-07-08
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PRIOR PILING DATE: 1999-07-04
PRIOR PILING DATE: 1999-07-04
PRIOR PILING DATE: 1999-07-07
PRIOR PILING DATE: 1999-08-31
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                                                                                  Kroger, Burkhard
Schroder, Hartwig
Zelder, Oskar
Haberhauer, Gregor
Lee, Heung-Shick
Kim, Hyung-Joon
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Query Match 40.3%
Best Local Similarity 48.6%
Matches 119; Conservative
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                                                                                                                                                                       GRLSKEEIERMVQEAEKYKAEDEVQRERVSAKNALESYAFN----MKSAVEDEGLKGKIS 180
                                                                                                                                                                                                                                                                                                                                            637 EDTLNKVDAAVAEAKAALGGSDISAIKSAMEKLGQESQALGQAIYEAAQAASQATGAAHP 696
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  65 AMTKDNNLLGRFELSGIPPAPRGVPQIEVTFDIDANGILNVTATDKSTGKANKITITNDK 124
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                                                          65 AMTKDNNLLGRFELSGIPPAPRGVPQIEVTFDIDANGILNVTATDKSTGKANKITITNDK 124
                                                                                  459 VKDVLLLDVTPLSLGIETKGGVMTRLIERNTTIPTKRSETFTTADDNQPSVQIQVYQGER
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                459 VKDVLLLDVTPLSLGIETKGGVMTRLIERNTTIPTKRSETFTTADDNQPSVQIQVYQGER
                                                                                                                                                                                                                                                                                       EADKKKVLDKCQEVISWLDANTL-AEKDEFEHKRKE---LEQVCNPIISGLYQGAGGPGP
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           APPLICANT: Siegel, Marvin
APPLICANT: Siegel, Marvin
APPLICANT: Chu, N. Randall
APPLICANT: Mizzen, Lee A.
TITLE OF INVENTION: INDUCTION OF A THI-LIKE RESPONSE IN VITRO
TITLE OF INVENTION: 12071/002001
CURRENT APPLICATION NUMBER: US/10/267,311
CURRENT AILING DATE: 2002-10-09
PRIOR PELICATION NUMBER: US/09/613,303
PRIOR PELICATION NUMBER: US 60/143,757
PRIOR FILING DATE: 1999-07-08
NUMBER OF SEQ ID NOS: 55
SOFTWARE: FASESEQ for Windows Version 4.0
SEQ ID NO 455
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          15;
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                                                                                                                                                                                                                                                                                                                                                                                                  237 GGFGAQGPKGGSGSGPTIEEVD 258
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         237 GGFGAQGPKGGSGSGPTIEEVD 258
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US-09-603-208A-32
; Sequence 32, Application US/09603208A
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         US-10-267-311-45
; Sequence 45, Application US/10267311
patent No. 6677055
; GENERAL INFORMATION:
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ORGANISM: Artificial Sequence
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Best Local Similarity 47.7%;
Matches 125; Conservative 3
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                                                                                                                                                                                           64
                                                                                                           179 ISEADKKKVLDKCQEVISWLDANTLAEKDEFEHKRKELEQVCNPIISGLYQGAGGPGGG
                                                                                   5 VQDLLLLDVAPLSLGLETAGGVMTALIKRNSTIPTKQTQIFTTYSDNQPGVLIQVYEGER
                                             16; Gaps
40.3%; Score 530; DB 4; Length 618; 48.6%; Pred. No. 1.8e-40; tive 35; Mismatches 75; Indels
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US-09-603-208A-34
; Sequence 34, Application US/09603208A
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Marvin
Randall
Siegel,
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                                                                                                                                   APPLICANT: Zelder, HATCWAY
APPLICANT: Zelder, Cora
APPLICANT: Zelder, Cora
APPLICANT: Lee, Heung-Shick
APPLICANT: Haberhauer, Gregor
APPLICANT: Kim, Hyung-Osn
TITLE OF INVENTION: CORNUBACTERIUM GLUTAMICUM GENES ENCODING STRESS,
TITLE OF INVENTION: CORNUBACTERIUM GLUTAMICUM GENES ENCODING STRESS,
TITLE OF INVENTION: RESISTANCE AND TOLERANCE PROTEINS
FILE REPERENCE: BGJ-124CP
CURRENT PILLING DATE: 1999-06-23
PRIOR APPLICATION NUMBER: 60/142692
PRIOR PILLING DATE: 1999-06-25
PRIOR PILLING DATE: 1999-07-01
PRIOR PILLING DATE: 1999-07-01
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PRIOR APPLICATION NUMBER: DE 1993141.8
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PRIOR PILLING DATE: 1999-07-01
PRIOR PILLING DATE: 1999-07-09
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   TYPE: PRT
ORGANISM: Corynebacterium glutamicum
                                                                                                                            Schroder, Hartwig
                                                          Pompejus, Markus
                                                                                             Kroger, Burkhard
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US-09-613-303-41
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Sequence 41, Application US/09613303 Patent No. 6495347 GENERAL INFORMATION:

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GENERAL INPORMATION:
APPLICANT: Siegel, Marvin
APPLICANT: Siegel, Marvin
APPLICANT: Siegel, Marvin
APPLICANT: Mizzen, Lee A.
TITLE OF INVENTION: INDUCTION OF A TH1-LIKE RESPONSE IN VITRO
FILE REFERENCE: 12071/002001
CURRENT PILING DATE: 2007-1009
FRICH REPLICATION NUMBER: US/99/613,303
PRIOR PILING DATE: 2000-07-10
PRIOR PLILING DATE: 2000-07-10
PRIOR PLILING DATE: 1999-07-08
NUMBER OF SEQ ID NOS: 55
SOFTWARE: RestSEQ for Windows Version 4.0
SEQ ID NO 41
LENGTH: 711
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                                            INDUCTION OF A TH1-LIKE RESPONSE IN VITRO
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Indels
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                                                                                                                                                                                                                                                                                                                                                                                                                                                  Query Match
40.0%; Score 525.5; DB 4
Best Local Similarity 48.2%; Pred. No. 5.7e-40
Matches 123; Conservative 31; Mismatches 86
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APPLICANT: Mizzen, Lee A.
TITLE OF INVENTION: INDUCTION OF A TH1-LIKE
FILE REFERENCE: 12071/002001
CURRENT APPLICATION NUMBER: US/09/613,303
CURRENT FILING DATE: 2000-07-10
PRIOR PILING DATE: 1999-07-08
NUMBER OF SEQ ID NOS: 55
SEQ ID NO 41
LENGTH: 711
                                                                                                                                                                                                                                                                                                                                                                      ; OTHER INFORMATION: fusion sequence US-09-613-303-41
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Sequence 41, Application US/10267311
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                                                                                                                                                                                                                                                                                             TYPE: PRT
ORGANISM: Artificial Sequence
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Best Local Similarity 48.23
Matches 123; Conservative
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Query Match
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                                                                            GRLSKEEIERMVQEAEKYKAEDEVQRERVSAKNALESYAFN----MKSAVEDEGLKGKIS 180
                                                                                                                                           64 RAMTKDNNLLGRFELSGIPPAPRGVPQIEVTFDIDANGILNVTATDKSTGKANKITITND 123
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                                                          65 AMTKDINILIGRFELSGIPPAPRGVPQIEVTFDIDANGILINVTATDKSTGKANKITITNDK 124
                                                                                                                                                                                                                 EDTLINKVDAAVAEAKAALGGSDISAIKSAMEKLGQESQALGQAIYEAAQAASQATGAAHP 696
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64
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TITLE OF INVENTION: STAPHYLOCOCCUS EPIDERMIDIS NUCLEIC ACIDS AND PROTEINS
TITLE OF INVENTION: STAPHYLOCOCCUS EPIDERMIDIS NUCLEIC ACIDS AND PROTEINS
THE REPERENCE: 191348018: US/09/710,279
CURRENT APPLICATION NUMBER: 00/0-11-09
PRIOR PILING DATE: 1999-11-09
NUMBER OF SEQ ID NOS: 4472
SOFTWARE: PATCHIN Ver. 2.1
                  181 EADKKKVLDKCQEVISWLDANTL-AEKDEFEHKRKE---LEQVCNPIISGLYQGAGGPGP
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                KKKVLDKCQEVISWLDANTLAEKDEFEHKRKELEQVCNPIISGLYQGAGGPGFGAQG
VQDLLLLDVAPLSLGLETAGGVMTALIKRNSTIPTKQTQIFTTYSDNQPGVLIQVYEGER
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ; Score 524.5; DB 4; Length 539;
; Pred. No. 4.8e-40;
47; Mismatches 82; Indels 11;
                                                                                                                                                                                                                                                                                                                                                         ; Sequence 888, Application US/09710279; Patent No. 6703492; GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          39.9%;
                                                                                                                                                                                                                                                    237 GGFGAQGPKGGSGSG 251
                                                                                                                                                                                                                                                                                 G----GEPGGAHPG 706
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ORGANISM: Artificial Sequence
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Best Local Similarity 45.13
Matches 115; Conservative
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US-09-134-001C-3646
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US-09-710-279-888
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; Sequence 3646, Application US/09134001C

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APPLICANT: Lynn Doucette-Stamm et al TITLE OF INVENTION: NUCLEIC ACID AND AMINO ACID SEQUENCES RELATING TO STAPHYLOCOCCUS TITLE OF INVENTION: BPIDERMIDIS FOR DIAGNOSTICS AND THERAPEUTICS
FILE REFERENCE: GTC-007
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           422 RPMASDNKTLGRRQLTDIPPAPRGVPQIEVTFDIDKNGIVNVTAKDLGTNKEQNITIQSS 481
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   184 KKKVLDKCQEVISWLDANTLAEKDEFEHKRKELEQVCNPIISGLYQGAGGPGGFGAQG 243
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    362 DVKDVVLLDVTPLSLGIEIMGGRMVTLIERNTTIPTSKSQVYSTAADNQPAVDIHVLQGE 421
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APPLICANT: LEE, AMY S.

TITLE OF INVENTION: CONTROL OF GENE EXPRESSION BY GLUCOSE,

CALCIUM AND TEMPERATURE

NUMBER OF SEQUENCES: 28

CURRENT APPLICATION NUMBER: US/07/354,988

PILING DATE: 19-MAY-1989

PRIOR APPLICATION NUMBER: 282,880

FILING DATE: 05-DEC-1988

PILING DATE: 01-JAN-1985

PILING DATE: 01-JAN-1985
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Length 616;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Query Match 39.9%; Score 524.5; DB 3; Best Local Similarity 45.1%; Pred. No. 5.8e-40; Matches 115; Conservative 47; Mismatches 82;
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ilarity 57.3%; Pred. No. 4.4e-40;
Conservative 33; Mismatches 41
                                                                                                           CURRENT PEPLICATION NUMBER: US/09/134,001C
CURRENT FILING DATE: 1998-08-13
PRIOR APPLICATION NUMBER: US 60/064,964
PRIOR FILING DATE: 1997-11-08
PRIOR APLICATION NUMBER: US 60/055,779
PRIOR FILING DATE: 1997-08-14
NUMBER OF SEQ ID NOS: 5674
LENGTH: 616
                                                                                                                                                                                                                                                                                                                                                                                         ; ORGANISM: Staphylococcus epidermidis
US-09-134-001C-3646
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Les 102; Conserv
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LENGTH: 187
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20; Gaps

88; Indels

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65 AMTKONNLLGRFELSGIPPAPRGVPQIEVTFDIDANGILNVTATDKSTGKANKITITNDK 124
                                                                                                                                                                                                      125 GRLSKEBIERMVQEAEKYKABDEVQRERVSAKNALESYAFNMKSAVEDEGLKGKISBADK 184
                                                                                                                                             447 PMAKDNKEIGRFDLTDIPPAPRGHPQIEVSFDIDANGIFHVSAKDVASGKEQKIRIEASS
                                                                                                                                                                                                                                                                                                             5 VQDLLLLDVAPLSLGLETAGGVMTALIKRNSTIPTKQTQIFTTYSDNQPGVLIQVYEGER
                                                                                                                                                                                                                                                                                    185 KKVLDKCQEVISWLDANTLAEK-----DEFEHKRKELE----QVCNPIISGLYQGAGGP
42; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        APPLICANT: MURPHY, Cheryl
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Matches 121; Conservative
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61 NDQNRLTPEEIERMVNDAEKFAEEDKKLKERIDTRNELESYAYSLKNQIGDKEKLGGKLS 120
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                                        181 EADKKKVLDKCQEVISWLDANTLAEKDEFEHKRKELEQVCNPIISGLYQGAGGFGFGG 238
                                                             181 BADKKKVLDKCQEVISWLDANTLAEKDEFEHKRKELEQVCNPIISGLYQGAGGPGPG 238
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ; DB 6; Length 187;
4.4e-40;
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APPLICANT: Stephens, Richard
APPLICANT: Stephens, Ralman, Sue
APPLICANT: Mitchell, Wayne
APPLICANT: Falman, Sue
APPLICANT: The Regents of the University of California
TITLE OF INVENTION: Chlamydia Pneumoniae Genome Sequence
FILE REPERENCE: 018941-000411US
CURRENT APPLICATION NUMBER: US/09/438,185A
CURRENT FILING DATE: 2002-03-13
PRIOR APPLICATION NUMBER: US 60/128,606
PRIOR APPLICATION NUMBER: US 60/128,606
PRIOR PILING DATE: 1999-04-08
NUMBER OF SEQ ID NOS: 1074
SEQ ID NO 505
LENGTHH: 663
                                                                                                                                                 FESCH: 13
5196533-13
; Patent No. 5196523
: APPLICANT: LEE, ANY S.
: APPLICANT: LEE, ANY S.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Query Match 39.4%; Score 518; DB 6; Length 18° Best Local Similarity 57.3%; Pred. No. 4.4e-40; Matches 102; Conservative 33; Mismatches 41; Indels
                                                                                                                                                                                                            TITLE OF INVENTION: CONTROL OF GENE EXP

COLCIUM AND TEMPERATURE
INTHERN OF SEQUENCES: 28
CURRENT APPLICATION DATA:
PILING DATE: 19-MAY-1999
PRIOR APPLICATION DATA:
PILING DATE: 05-DEC-1998
PILING DATE: 05-DEC-1998
PILING DATE: 01-JAN-1965
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Sequence 505, Application US/09438185A Patent No. 6822071 GENERAL INFORMATION:
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ORGANISM: Chlamydia pneumoniae
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         39.3%;
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Best Local Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                               SEQ ID NO:13:
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US-09-438-185A-505
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STOREY, James
BELTZ, Gerald A.
COUGHLIN, Richard T.
TITLE OF INVENTION: NECONDS, PROTEINS, AND METHODS OF USE OF GRANULOCYTIC ERHLICHIA
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy disk
COMPUTER: IBM PC compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
OPERATING SYSTEM: RC-DOS/MS-DOS
SOFTWARE: PatentIn_Release #1.0, Version #1.30
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      FILING DATE: 24-Apr-1998
CLASSIFICATION: «Unknown»
PRIOR APPLICATION DATA:
APPLICATION NUMBER: US 60/044,869
FILING DATE: 25-APR-1997
ATTORNEY/AGENT INFORMATION:
NAME: Superko, Colleen
REGISTRATION NUMBER: 39,850
REFERENCE/DOCKET NUMBER: 106.941.156
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   38.8%; Score 509.5; DB 3 44.7%; Pred. No. 1.5e-38;
235 G-----PGGFGAQGPKGGSGSGPTIEEVD 258
                                              624 NINTEDLKKHSFSTKPPSNNGSSEDHIEEAD 654
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APPLICATION NUMBER: US/09/066,047A
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US-09-066-047-5
                                                                                                                                                                                                                                                                                                                                                                                                                        CORRESPONDENCE ADDRESS:
ADDRESSEE: HALE AND DORR LLP
STREET: 60 State Street
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              TELEPHONE: (617) 526-6000
TELEPAX: (617) 526-5000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       TELECOMMUNICATION INFORMATION:
TELEPHONE: (617) 526-6000
                                                                                                                                                                     Sequence 5, Application US/09066047A Patent No. 6306394 GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 LENGTH: 649 amino acids
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           STATE: Massachusetts
COUNTRY: United States
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Best Local Similarity
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Sequence 17756, Application US/09248796A

Patent No. 6747137

GENERAL INFORMATION:
TITLE OF INVENTION: WCLEIC ACID AND AMINO ACID SEQUENCES RELATING TO CANDIDA ALBICANS: TITLE OF INVENTION: FOR DIAGNOSTICS AND THERAPEUTICS
TITLE OF INVENTION: FOR DIAGNOSTICS AND THERAPEUTICS
FILE REFERENCE: 107196.132
CURRENT APPLICATION NUMBER: 1899-02-12
CURRENT FILING DATE: 1999-02-12
PRIOR FILING DATE: 1998-02-13
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            4 NVQDLLLLDVAPLSLGLETAGGVMTALIKRNSTIPTKQTQIFTTYSDNQPGVLIQVYEGE
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Length 679;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          78; Indels
                                                                                                                                                                                      Patentin Release #1.0, Version #1.25
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    37.8%; Score 497; DB 1; 45.9%; Pred. No. 2.3e-37;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Mismatches
                STREET: 1299 Pennsylvania Ave, NW CITY: Washington
                                                                                                                                                                                                          CURRENT APPLICATION DATA:
APPLICATION NUMBER: US/08/214,583
                                                                                                                                                                                                                                                                                  ATTORNEY/AGENT INFORMATION:
NAME: Auerbach, Jeffrey I.
REGISTRATION NUMBER: 32,680
TELECOMMUNICATION INFORMATION:
TELEPHONE: 202-383-7451
TELEPHONE: 202-383-6610
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            41;
                                                                                                                                                    COMPUTER: IBM PC compatible
                                                                                                            COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy disk
                                                                                                                                                                                                                                                                                                                                                                                                                                            679 amino acids
                                                                                                                                                                                                                                                                                                                                                                                                  INFORMATION FOR SEQ ID NO: SEQUENCE CHARACTERISTICS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Best Local Similarity 45.9
Matches 111; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        TOPOLOGY: Linear MOLECULE TYPE: protein
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  single
                                                                                                                                                                                                                                                                  CLASSIFICATION: 435
ADDRESSEE: Howrey
                                                                                                                                                                      OPERATING SYSTEM:
                                                                                                                                                                                                                                                                                                                                                                                                                                                              amino acid
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            IMMEDIATE SOURCE:
CLONE: mortalin
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ORIGINAL SOURCE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                              STRANDEDNESS:
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US-09-248-796A-17736
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                                                                                                                                                                                                                                              FILING DATE:
                                                                                            20004
                                                                                                                                                                                          SOFTWARE:
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                                                                                                                                                                                                                                                                                                                                                                                                                                        LENGTH:
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TITLE OF INVENTION: POR DIAGNOSTICS AND THERAPEUTICS
FILE REPREBNCE: 2709,2005-001
CURRENT APPLICATION NUMBER: US/09/540,236
CURRENT FILING DATE: 2000-04-04
NUMBER OF SEQ ID NOS: 3840
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             124 KGRLSKEEIERMVQEAEKYKAEDEVQRERVSAKNALESYAFNMKSAVEDEGLKGKISEAD 183
                                                                                                                                                                                                                                                                      KKKVLDKCQEVISWL-DANTLAEKDEFEHKRKELEOVCNPIISGLYQGAGGPGFGAQ 242
                                                            64 RAMTKDNNLLGRFELSGIPPAPRGVPQIEVTFDIDANGILNVTATDKSTGKANKITITND 123
                                                                                                                                        560 KSNIESAIKDLRECLNDSN--CSTDTLQQKYDALMNLSMKLGEAAYAANKNDGAGSADQS 617
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APPLICANT: Wadhwa, Renu
TITLE OF INVENTION: MORTALIN AND METHODS FOR DETERMINING
TITLE OF INVENTION: COMPLEMENTATION GROUP ASSIGNMENT OF CANCER CELLS
CORRESPONDENCE: 2
CORRESPONDENCE ADDRESS:
                                        4 NVQDLLLLDVAPLSLGLETAGGVMTALIKRNSTIPTKQTQIFTTYSDNQPGVLIQVYEGE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   SENVQDLLLLDVAPLSLGLETAGGVMTALIKRNSTIPTKQTQIFTTYSDNQPGVLIQVYE
    Gaps
    7;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      38.1%; Score 500; DB 4; Length 636; 46.0%; Pred. No. 1.1e-37; ive 48; Mismatches 68; Indels 1
    91; Indels
    44; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Sequence 2873, Application US/09540236; Patent No. 6673910; GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ; Sequence 2, Application US/08214583; Patent No. 5627039; GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                    G-PKGGSGSGPTIEEVD 258
                                                                                                                                                                                                                                                                                                                                                                                        GSSSGGSDGNPEERVVD 634
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Query Match 38.1%
Best Local Similarity 46.0%
Matches 109; Conservative
      115; Conservative
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US-09-540-236-2873
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      Matches
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GENERAL INFORMATION:
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                                                                                                                                                                                                                                                               49 SDNQPGVLIQVYEGERAMTKDNNLLGRFELSGIPPAPRGVPQIEVTFDIDANGILNVTAT 108
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      65 AMTKDNNLLGRFELSGIPPAPRGVPQIEVTFDIDANGILNVTATDKSTGKANKITITNDK 124
                                                                                                                                                                                                                                                                                                                                                                                         GRLSKEEIERMVQEAEKYKAEDEVQRERVSAKNALESYAFNMKSAVEDEGLKGKISEADK 184
                                                                                                                                                                                                                                                                                                                                                                                                                              398 G-LSDAEIEKWYNDAEKFAESDKARREAIEFANRADQLCNDTENSLNEH--KEKLSSESV 454
                                                                                                                                                                                                                                                                                                                                                                                                                                                                  KKYLDKCQ---EVISWLDANTLAEKDEFEHKRKELEQVCNPIISGLYQGAGGPGFGA 241
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       SDNQPTVTIKVYEGERPLTKDNHLLGTFDLTGIPPAPRGVPQIEVTFEIDVNGILRVTAE 65
                                                                                                                                                                                                                                           5 VODLLLLDVAPLSLGLETAGGVMTALIKRNSTIPTKQTQIFTTYSDNQPGVLIQVYEGER
                                                                                                                                                                                                           Gaps
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                                                                                                                                                                    DB 4; Length 516;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               37.2%; Score 488.5; DB 4; Length 1
58.9%; Pred. No. 2.5e-37;
tive 29; Mismatches 37; Indels
                                                                                                                                                                                                       82; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            169 AVED-EGLKGKISEADKKKVLDKCQEVISWLDANTLAEKDEFE 210
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                                                                                                                                                                   37.3%; Score 489.5; DB 4 43.4%; Pred. No. 7.8e-37; tive 47; Mismatches 82
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Sequence 7. Application US/09581001B
Fatent No. 6472142
GENERAL INFORMATION:
APPLICANT: No. 6472142eborn, Mathieu
APPLICANT: No. 6472142eborn, Mathieu
TITLE OF INVENTION: METHODS AND MEANS FOR INDI
TITLE OF INVENTION: METHODS AND MEANS
TITLE OF INVENTION: METHODS AND MEANS
FILLE REFERENCE: 2906-4940US
CURRENT FILING DATE: 1206-07-24
FRIOR APPLICATION NUMBER: PCT/NL96/0068B
FRIOR APPLICATION NUMBER: PCT/NL96/0068B
FRIOR APPLICATION NUMBER: EP 97203783.2
FRIOR FILING DATE: 1998-12-03
NUMBER OF SEQ ID NOS: 23
SOFTWARE: Patentin version 3.1
PRIOR APPLICATION NUMBER: US 60/096,409
PRIOR FILING DATE: 1998-08-13
NUMBER OF SEQ ID NOS: 28208
SEQ ID NO 17736
LENGTH: 516
                                                                                                               : Candida albicans
                                                                                                                                                                                      Best Local Similarity 43.49
Matches 106; Conservative
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Best Local Similarity
Matches 96; Conserva
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US-09-581-001B-7
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                                                                                          TYPE: PRT ORGANISM:
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                                                                                                                                                                    Query Match
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APPLICANT: Keith Weinstock et al TITLE OF INVENTION: VOCLEIC ACID AMINO ACID SEQUENCES RELATING TO CANDIDA ALBICANS TITLE OF INVENTION: NOCLEIC ACID AND THERAPEUTICS TITLE OF INVENTION: FOR DIAGNOSTICS AND THERAPEUTICS FILE REFERENCE: 107196.132 (18/90/248,796A CURRENT APPLICATION NUMBER: US/90/248,796A CURRENT FILING DATE: 1999-02-12 PRIOR APPLICATION NUMBER: US 60/074,725 PRIOR FILING DATE: 1999-02-13 PRIOR FILING DATE: 1999-02-13 PRIOR FILING DATE: 1999-06-13
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Patent No. 6562958

GENERAL INFORMATION:

APPLICANT: Gary L. Breton et al.

ITILE OF INVENTION: BAUMANNII FOR DIAGNOSTICS AND THERAPEUTICS

TITLE OF INVENTION: BAUMANNII FOR DIAGNOSTICS AND THERAPEUTICS

FILE REFERENCE: GTC99-03PA

CURRENT APPLICATION WHBER: US/09/328,352

CURRENT APPLICATION WHBER: US/09/328,352

MUMBER OF SEQ ID NOS: 8252
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37.1%; Score 488; DB 4; Length 660;
Best Local Similarity 45.1%; Pred. No. 1.5e-36;
Matches 114; Conservative 40; Mismatches 83; Indels
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Query Match 37.1%; Score 488; DB 4; Length 20 Best Local Similarity 55.7%; Pred. No. 3e-37; Matches 98; Conservative 24; Mismatches 48; Indels
Sequence 17615, Application US/09248796A
Patent No. 6747137
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SEQ ID NO 17615
LENGTH: 208
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Sequence 16, Application US/09207388

Patent No. 649780

GENERAL INFORMATION:
APPLICANT: Wisniewski, Jan
APPLICANT: Wisniewski, Jan
TITLE OF INVENTION: HEASERIA MENINGITIDIS, CANDIDA GLABRATA AND ASPERGILLUS
TITLE OF INVENTION: PUMIGATUS
TITLE OF INVENTION: PUMIGATUS
TITLE OF INVENTION: PUMIGATUS
TITLE OF INVENTION: 1998-12-08
CURRENT APPLICATION NUMBER: US/09/207,388
CURRENT APPLICATION NUMBER: US/09/207,388
CURRENT PILING DATE: 1998-12-08
NUMBER OF SEQ ID NOS: 102
SOFTWARE: FASESEQ for Windows Version 3.0
SEQ ID NO 16
LENGTH: 662
TYPE: PRT
                                                                                                                                                                                                                                                                                                                                                                            GREERAL INCORMATION:
APPLICANT: Wishiewski, Jan
TITLE OF INVENTION: HEAT SHOCK GENES AND PROTEINS FROM
TITLE OF INVENTION: NEISERIA MENINGITIDIS, CANDIDA GLABRATA AND ASPERGILLUS
TITLE OF INVENTION: FUMIGATUS
FILE REFERENCE: 970109.411
CURRENT APPLICATION NUMBER: US/09/207,388
CURRENT APPLICATION NUMBER: US/09/207,388
CURRENT FILING DATE: 1998-12-08
NUMBER OF SEQ ID NOS: 102
SOFTWARE: PSELSEQ for Windows Version 3.0
SEQ ID NO 15
LENGTH: 642
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 67 TKDNNLLGRFELSGIPPAPRGVPQIEVTFDIDANGILNVTATDKSTGKANKITITNDKGR 126
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369 ASANKSLGQFNLGDIAPAPRGMPQIEVTFDIDANGILHVSAKDKGTGKAANITIQGSSG-
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Query Match 36.8%; Score 484; DB 4; Length 64 Best Local Similarity 51.2%; Pred. No. 3.4e-36; Matches 105; Conservative 33; Mismatches 61; Indels
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                                                                                                                                                                                                      187 V---LDKCQEVISWLDANTLAEKDE 208
                                                                                                                                                                      187 V---LDKCQEVISWLDANTLAEKDE 208
                                                                                                                                                                                                                                                                                         RESULT 48
US-09-207-388-15
; Sequence 15, Application US/09207388
; Patent No. 6497880
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US-09-207-388-16
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Patent No. 6730302
GENERAL INFORMATION:
GENERAL INFORMATION:
TITLE OF INVENTION: INTRACELLULAR TARGETED DELIVERY OF COMPOUNDS BY 70 KD HEAT SHOCK FILE REFERENCE: DB8
CURRENT FILING DATE: 1999-11-16
PRIOR FILING DATE: 1999-11-24
NUMBER OF SEQ ID NOS: 5
SOFTWARE: Patentin version 3.0
SEQ ID NO 3:
LENGTH: 92
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Patent No. 6497880
GENERAL INFORMATION:
GENERAL INFORMATION:
TITLE OF INVENTION: HEAT SHOCK GENES AND PROTEINS FROM
TITLE OF INVENTION: PUBLISERIA MENINGITIDIS, CANDIDA GLABRATA AND ASPERGILLUS
TITLE OF INVENTION: FUNICARIANS
FILE REFERENCE: 870109.411
CURRENT APPLICATION NUMBER: US/09/207,388
CURRENT PILING DATE: 1998-12-08
NUMBER OF SEQ ID NOS: 102
SOFTWARE: FastSEQ for Windows Version 3.0
SEQ ID NO 14
LENGTH: 562
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                                                                                        516 ANSG-LSDABIEAMIKDAEANAEEDRKFEELAKARNEADALISSSNKAVKDLG--DKVTE 572
                                                          182 ADKKKVLDKCQEVISWLDANTLAEKDE-FEHKRKELEQVCNPIISGLYQ-----GAGGGP 234
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  1 KSAVEDEGLKGKISEADKKKVLDKÇQEVISWLDANTLAEKDEFEHKRKELEQVCNPIISG
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100.0%; Pred. No. 1.5e-37;
iive 0; Mismatches 0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    227 LYQGAGGPGPGFGAQGPKGGSGSGPTIEEVD 258
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                                                                                                                                                       235 GPGGFGAQGPKGG 247
                                                                                                                                                                                                   629 DPNAF--QGGDAG 639
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Query Match
Best Local Similarity 100.4
Matches 92; Conservative
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ORGANISM: Homo Sapien
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Best Local Similarity
Matches 105; Conserv
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US-09-207-388-14
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US-09-440-967-3
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229 -- QGAGGPGPGFGAQGPKG 246
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APPLICANT: Goldman,
APPLICANT: Hinkle,
                                                                                                                                                                                                                                                                                                                           RESULT 51
US-09-252-991A-27358
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US-09-902-540-12527
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|SEEEIERMVKDAEANAEEDKKLTELVASRNQAEALIHSVKKSLADYG--DKLDAAEKEK 585
                                                                                                                                                                  469 ASANKSLGQFNLGDIAPAPRGMPQIEVTFDIDANGILHVSAKDKGTGKAANITIQGSSG-527
                                                                                                                                                                                                                   LSKEEIERMVQEAEKYKAEDEVQRERVSAKNALESYAFNMKSAVEDEGLKGKISEADKKK 186
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            393 SGHVKDÍVLÍDVTPÍSLGIBTLGGVFTRLÍNKNTTÍPTRKSÓVFSTAADGÓTAVEIRVFQ 452
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                                                                        DILLILDVAPLSLGLETAGGVMTALIKRNSTIPTKQTQIFTTYSDNQPGVLIQVYEGERAM
                                                                                                                                             TKONNLLGRFELSGIPPAPRGVPQIEVTFDIDANGILNVTATDKSTGKANKITITNDKGR
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                                     Gaps
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                                                                                                                                                                                                                                                                                                                                                                                                             Sequence 4, Application US/08441139
Patent No. 5773245
GENERAL INFORMATION:
APPLICANT: Wittrup, Dr. Karl D.
APPLICANT: Wittrup, Dr. Karl D.
TITLE OF INVENTION: METHODS FOR INCREASING SECRETION OF
TITLE OF INVENTION: RECOMBINANTLY EXPRESSED PROTEINS
NUMBER OF SEQUENCES: 20
CORRESPONDENCE ADDRESS:
ADDRESSER: SCULLY, SCOTT, MURPHY & PRESSER
STREET: 400 darden City Plaza
CITY: Garden City
 36.8%; Score 484; DB 4; Length 662; 51.2%; Pred. No. 3.6e-36;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Score 482.5; DB 1; Leas-
Pred. No. 4.7e-36;
                                 61, Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy disk
MEDIUM TYPE: Floppy disk
COMPUTER: IBM PC compatible
COMPUTER: IBM PC compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
SOFFWARE: Patentin Release #1.0, Version #1.25
CURRENT APPLICATION DATA:
APPLICATION NUMBER: US/08/441,139
FILING DATE: 15-MAY-1995
CLASSIFICATION: 435
PRIOR APPLICATION NUMBER: US 08/089,997
FILING DATE: 06-JUL-1993
ATTORNEY/AGENT INFORMATION:
NAME: DiGiglio, Frank S.
                                     33; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       54; Mismatches
                                                                                                                                                                                                                                                                                                                187 V---LDKCQEVISWLDANTLAEKDE 208
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         NAME: Didiglio, Frank S.
REGISTRATION NUMBER: 31,346
RERENCE/DOCKET NUMBER: 8646
TELECOMMUNICATION INPORMATION:
TELEPHONE: 516-742-4343
TELEX: 230 901 SANS UR
INPORMATION FOR SEQ ID NO: 4:
SEQUENCE CHARACTERISTICS:
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           641 amino acids
                                   Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Best Local Similarity 41.2
Matches 107; Conservative
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                    Similarity
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                                     105;
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Query Match
Best Local S
Matches 105
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GENERAL INFORMATION:
APPLICANT: Marc J. Rubenfield et al.
APPLICANT: Marc J. Rubenfield et al.
APPLICANT: Marc J. Rubenfield et al.
TITLE OF INVENTION: NUCLEIC ACID AND AMINO ACID SEQUENCES RELATING TO PSEUDOMONAS TITLE OF INVENTION: AERUGINOSA FOR DIAGNOSTICS AND THERAPEUTICS
FILE REFERENCE: 107196_136
CURRENT APPLICATION NUMBER: US 60/074,788
PRIOR APPLICATION NUMBER: US 60/074,788
PRIOR FILING DATE: 1998-02-18
PRIOR FILING DATE: 1998-07-27
NUMBER: US 60/094,190
PRIOR FILING DATE: 1998-07-27
NUMBER: OF SEQ ID NOS: 33142
SEQ ID NO 27358
LENGTH: 657
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                                    453 GERELVRDNKLIGNFQLTGIAPAPKGQPQIEVSFDVDADGIINVSARDKATNKDSSITVA 512
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                                                                                                                                                                                                       513 GSSG-LTDSEIEAMVADAEKYRASDMARKEAIENGNRAESVCTDIESNLDIHKDKLDQQA 571
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APPLICANT: Slater, Steven C.
APPLICANT: Wiegand, Roger C.
TITLE OF INVENTION: Myxococcus xanthus Genome Sequences and Uses Thereof FILE REPERENCE: 38-10(15849)B
CURRENT APPLICATION NUMBER: US/09/902,540
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   184 KKKVLDKCQEVISWLDANTLA-EKDEFEHKRKELEQVCNPIISGLY-----QGAGGP 234
                                                                                                                                                                                                                                                                             170 VEDEGLKGKISEADKKKVLDKCQEVISWLDANTLA-EKDEFEHKRKELEQVCNPIISGLY
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                                                                                                                                        122 NDKGRLSKEEIERMVQEAEKYKAEDEVQRERVSAKNALESYAFNMKS----
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         TITLE OF INVENTION: HEAT SHOCK GENES AND PROTEINS FROM
TITLE OF INVENTION: HEAT SHOCK GENES AND PROTEINS FROM
TITLE OF INVENTION: NEISSERIA MENINGITIDIS, CANDIDA GLABRATA AND ASPERGILLUS
TITLE OF INVENTION: FUNIGATUS
FILE REFERENCE: 870109.411
CURRENT APPLICATION NUMBER: US/09/207,388
CURRENT PILLING DATE: 1998-R: 108
NUMBER OF SEQ ID NOS: 102
SOFTWARE: FastSEQ for Windows Version 3.0
SEQ ID NO 13
LENGTH: 642
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            LSKEEIERMVQEAEKYKAEDEVQRERVSAKNALESYAFNMKSAVEDEGLKGKISEADKKK 186
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             67 TKDNNLLGRFELSGIPPAPRGVPQIEVTFDIDANGILNVTATDKSTGKANKITITNDKGR 126
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   407 EMADDIKTLARFELVGIPPAFRGVPQIEVSFDIDANGIVHVSAKDLGTGKVQQVRVVSNS 466
                                                                                                                                                                                                                                                                                                                                                                                                                          65 AMTKDNNLLGRFELSGIPPAPRGVPQIEVTFDIDANGILNVTATDKSTGKANKITITNDK 124
                                                                                                                                                                                                                                                                                                                                                                                                   GRLSKEEIERMYQEAEKYKAEDEVQRERVSAKNALESYAFNMKSAVEDEGLKGKISEADK 184
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             7 DLLLLDVAPLSLGLETAGGVMTALIKRNSTIPTKQTQIFTTYSDNQPGVLIQVYEGERAM 66
                                                                                                                                                                                                                                                          5 VQDLLLLDVAPLSLGLETAGGVMTALIKRNSTIPTKQTQIFTTYSDNQPGVLIQVYEGER
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  36.5%; Score 480; DB 4; Length 642; ilarity 50.7%; Pred. No. 8e-36; Conservative 33; Mismatches 62; Indels
                                                                                                                                                                                 36.5%; Score 480; DB 4; Length 569;
43.1%; Pred. No. 6.8e-36;
.ive 55; Mismatches 65; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                           KKV---LDKCQEVISWLDANTLAEKDEFEHKRKELEQVCNPIISG 226
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  187 V---LDKCQEVISWLDANTLAEKDE 208
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      CURRENT FILING DATE: 2001-07-10 PRIOR APPLICATION NUMBER: 60/217,883 PRIOR FILING DATE: 2000-07-10 NUMBER OF SEQ ID NOS: 16825 SEQ ID NO 12527 LENGTH: 569
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Sequence 13, Application US/09207388 Patent No. 6497880 GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ORGANISM: Neisseria meningitidis
                                                                                                              TYPE: PRT
ORGANISM: Myxococcus xanthus
                                                                                                                                                                                                                       97; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Similarity
                                                                                                                                                                                       Query Match
Best Local Similarity
                                                                                                                                                  US-09-902-540-12527
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Matches 104;
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                                                                                                                                                                                                                       Matches
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64 RAMIKDNNLLGRFELSGIPPAPRGVPQIEVTFDIDANGILNVTATDKSTGKANKITITND 123
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     124 KGRLSKEEIERMVQEAEKYKAEDEVQRERVSAKNALESYAFNMKSAVEDEGLKGKISEAD 183
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  184 KKKV----LDKCQEVISWLDANTLAEKDEFEHKRKELEQVCNPIISGLYQGAGGPGPGF
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             4 NVQDLLLLDVAPLSLGLETAGGVMTALIKRNSTIPTKQTQIFTTYSDNQPGVLIQVYEGE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Length 607;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ; DB 2; Le._
. 4.16-35; Indel8
                                                               APPLICANT: Hamel, Josee
APPLICANT: Brodeur, Bernard R
APPLICANT: Martin, Denis S
TITLE OF INVENTION: STREPTOCOCCUS PNEUMONIAE
TITLE OF INVENTION: STREPTOCOCCUS PNEUMONIAE
                                                                                                                                                                                                                                                                                                                                           COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy disk
COMPUTER: IBM PC compartible
COMPATING SYSTEM: PC-DOS/MS-DOS
SOFTWARE: Patentin Release #1.0, Version #1.30
CURRENT APPLICATION DATA:
APPLICATION NUMBER: US/08/472,534
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Query Match
35.9%; Score 472; DB
Best Local Similarity 41.6%; Pred. No. 4.1e
Matches 106; Conservative 46; Mismatches
                                                                                                                                                                                                                                            STREET: 1251 Avenue of the Americas
                                                                                                                                                                                                                                                                                       STATE: New York
COUNTRY: United States of America
ZIP: 10020
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ; Sequence 4651, Application US/09583110
; Patent No. 6699703
; APERAL INFORMATION:
; APPLICANT: Lynn Doucette-Stamm et al.
Sequence 5, Application US/08472534 Patent No. 5919620 GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           27,794
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              REFERENCE/DOCKET NUMBER: Bi
TELECOMMUNICATION INFORMATION:
TELEPHONE: 212-596-9000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ||:| : :| :
585 GAEGAQATGNAGDDV 599
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          CLASSIFICATION: 424
ATTORNEY/AGENT INFORMATION:
NAME: Haley Jr, James F
REGISTRATION NUMBER: 27,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 : 607 amino acids
amino acid
                                                                                                                                                                          NUMBER OF SEQUENCES: 6
CORRESPONDENCE ADDRESS:
ADDRESSEE: Fish & Neave
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    TELEX: 14-8367
INFORMATION FOR SEQ ID NO:
SEQUENCE CHARACTERISTICS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             212-596-9090
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   MOLECULE TYPE: protein
                                                                                                                                                                                                                                              STATE: New York
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   US-09-583-110-4651
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420 RPMAADNKTLGREQLTDIPAAPRGIPQIEVTFDIDKNGIVSVKAKDLGTQKEQTIVIQSN 479
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   360 DVKDVVLLDVTPLSLGIETMGGVFTKLIDRNTTIPTSKSOVFSTAADNOPAVDIHVLQGE 419
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           184 KKKV----LDKCQEVISWLDANTLAEKDEFEHKRKELEQVCNPIISGLYQGAGGPGFFF 239
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        539 AAQAALDDLKKAQE----DNNL----DDMKAKLEALNEKAQGLAVKLYEQAAAAQQAQE 589
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  64 RAMTKDNNLLGRFELSGIPPAPRGVPQIEVTFDIDANGILNVTATDKSTGKANKITITND 123
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               124 KGRLSKEEIERMVQEAEKYKAEDEVQRERVSAKNALESYAFNMKSAVEDEGLKGKISEAD 183
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 4 NVQDLLLLDVAPLSLGLETAGGVMTALIKRNSTIPTKQTQIFTTYSDNQPGVLIQVYEGE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 14;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Length 612;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Query Match 35.9%; Score 472; DB 4; Best Local Similarity 41.6%; Pred. No. 4.1e-35; Matches 106; Conservative 46; Mismatches 89
                                                                REFERENCE/DOCKET NUMBER: GTC-011
TELECOMMUNICATION INFORMATION:
TELEPHONE: (781)893-807
INFORMATION FOR SEQ ID NO: 3621:
SEQUENCE CHARACTERISTICS:
LENGTH: 612 amino acids
TYPE: amino acid
TYPE: amino acid
TYPE: protein
HYPOTHETICAL: YES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           APPLICANT: Black, Michael
APPLICANT: Hodgson, John
APPLICANT: Hodgson, John
APPLICANT: Nicholas, David
APPLICANT: Stodola, Robert
TITLE OF INVENTION: No. 6348328el Compounds
CORRESPONDENCE: 552
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  OPERATING SYSTEM: DOS
SOFTWARE: FastSEQ for Windows Version 2.0
CURRENT APPLICATION DATA:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                3: SmithKline Beecham Corporation
709 Swedeland Road
                                                                                                                                                                                                                                                                                                                                                                  ORGANISM: Streptococcus pneumoniae
                                                                                                                                                                                                                                                                                                                                                                                                               NAME/KEY: misc feature
LOCATION: (B) LOCATION 1...612
SEQUENCE DESCRIPTION: SEQ ID NO: 3621:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        APPLICATION NUMBER: US/08/858,207A
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       INFORMATION
                             NAME: Ariniello, Pame
REGISTRATION NUMBER:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          240 GAQGPKGGSGSGPTI 254
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       590 GARGAQATGNAGDDV 604
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COMPUTER READABLE FORM:
                                                                                                                                                                                                                                                                                                                                            ORIGINAL SOURCE:
       ATTORNEY/AGENT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               USA
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       US-09-107-433-3621
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               RESULT 57
US-08-858-207A-481
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                                                                                                                                                                                                                                                                                                                                                                                         FEATURE
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  Nucleic Acid and Amino Acid Sequences Relating to Streptococcus
Pneumoniae for Diagnostics and Therapeutics
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             355 DVXDVVLLDVTPLSLGIETWGGVFTKLIDRNTTIPTSKSQVFSTAADNQPAVDIHVLQGE 414
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               RAMTKDNNLLGRFELSGIPPAPRGVPQIEVTFDIDANGILNVTATDKSTGKANKITITND 123
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                124 KGRLSKEBIERMVQEAEKYKAEDEVQRERVSAKNALESYAFNMKSAVEDEGLKGKISEAD 183
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               184 KKKV----LDKCQEVISWLDANTLAEKDEFEHKRKELEQVCNPIISGLYQGAGGPGFGF 239
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Sequence 3621, Application US/09107433

Patent No. 6800744

GENERAL INFORMATION:
APPLICANT: Lynn A Doucette-Stamm and David Bush
TITLE OF INVENTION: SEQUENCES RELATING TO STREPTOCOCCUS PNEUMONIAE
THERRAPEUTICS RELATING TO STREPTOCOCCUS PNEUMONIAE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                   ;; Score 472; DB 4; Length 607;
;; Pred. No. 4.1e-35;
46; Mismatches 89; Indels 14;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ADDRESSEE: GENOME THERAPEUTICS CORPORATION
STREET: 100 Beaver Street
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       SOFTWARE: <Unknown>
CURRENT APPLICATION DATA:
APPLICATION NUMBER: US/09/107,433
FILING DATE: 30-Jun-1998
PRIOR APPLICATION DATA:
APPLICATION NUMBER: 60/085131
FILING DATE: MAY 12, 1998
APPLICATION NUMBER: 60/051553
                                       FILE REPERENCE: PATHO0-07A

CURRENT APPLICATION NUMBER: US/09/583,110

CURRENT FILING DATE: 2000-05-26

FRIOR APPLICATION NUMBER: US 60/085,131

PRIOR PILING DATE: 1998-05-12

PRIOR PILING DATE: 1998-05-12

PRIOR FILING DATE: 1998-05-12

PRIOR FILING DATE: 1999-05-12

PRIOR FILING DATE: 1999-05-12

PRIOR FILING DATE: 1999-05-13

FRIOR FILING DATE: 1999-05-13

SEQ ID NO 4651
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   OPERATING SYSTEM: <Unknown>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          FILING DATE: July 2, 1997
                                                                                                                                                                                                                                                                                                                                         ; TYPE: PRT
; ORGANISM: Streptococcus pneumoniae
US-09-583-110-4651
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        STATE: Massachusetts
COUNTRY: USA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     NUMBER OF SEQUENCES: 5206
                                                                                                                                                                                                                                                                                                                                                                                                                                      35.9%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 GAEGAQATGNAGDDV 599
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           240 GAQGPKGGSGSGPTI 254
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             COMPUTER: <Unknown>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                COMPUTER READABLE FORM:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           CORRESPONDENCE ADDRESS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Matches 106; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               CITY: Waltham
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ZIP: 02354
                                                                                                                                                                                                                                                                                                                                                                                                                                      Query Match
Best Local Similarity
  INVENTION:
INVENTION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                RESULT 56
US-09-107-433-3621
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TITLE OF
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GENERAL INFORMATION:
APPLICANT: GARY BRETON
TITLE OF INVENTION: DIAGNOSTICS AND THERAPEUTICS
TITLE OF INVENTION: DIAGNOSTICS AND THERAPEUTICS
FILE REFERENCE: 2709.1002-001
CURRENT APPLICATION NUMBER: US 609-64-05
FROM APPLICATION NUMBER: US 60/128,706
RACH APPLICATION NUMBER: US 60/128,706
RACH APPLICATION NUMBER: US 60/128,706
REIGHT FILING DATE: 1999-04-09
NUMBER OF SEQ ID NOS: 8344
SEQ ID NO 6258
LENGTH: 641
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Sequence 9, Application US/09581001B
Patent No. 6472142
GENERAL INFORMATION
GENERAL INFORMATION: METHODORY
APPLICANT: No. 6472142eborn, Mathieu
APPLICANT: No. 6472142eborn, Mathieu
APPLICANT: No. 6472142eborn, Mathieu
APPLICANT: No. 6472142eborn, Mathieu
APPLICANT: No. 6472142eborn, Mathieu
APPLICANT: No. 6472142eborn, Mathieu
APPLICANT: No. 6472142eborn, Mathieu
APPLICANT: No. 6472142eborn, Mathieu
APPLICANT: No. 6472142eborn, Mathieu
APPLICATION NUMBER: US. 6702-67-24
PRIOR APPLICATION NUMBER: PCT/NL98/00688
                                                                                                                                                                                                                                                                                        242
385 DVKDVLLLDVTPLSLGIETMGGVMTALIŠKNTTIPTKHSQVFSTAEDNQSAVTIHVLQGE 444
                                                           64 RAMTKDNNLLGRFELSGIPPAPRGVPQIEVTFDIDANGILNVTATDKSTGKANKITITND 123
                                                                                                              445 RKRASDNKSLGQFNLDGINPAPRGMPQIEVTFDIDADGILHVSAKDKNSGKEQKITIKAS 504
                                                                                                                                                                                                                             505 SG-LINEERIQKMVREARASAESDRKFEELVQTRNQGDHLLHSTRKQAERAGYK---LPAD 560
                                                                                                                                                                                                                                                                                                                                           561 DKTAI---ESALTALESSLKGEDKADIEAKMQALAQASQKLMEIAQQQHAQQQAGSADAQ 617
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                505 SG-LINBEBIOKMVRDABANABADRKFBELVOTRNOADOLVHGTRKOIBBAG--DKLAAND 561
                                                                                                                                                                          124 KGRLSKEEIERMVQEAEKYKAEDEVQRERVSAKNALESYAFNMKSAVEDEGLKGKISEAD
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                                                                                                                                                                                                                                                                                        184 KKKVLDKCQEVISWLDANTLAE-KDEFEHKRKELEQVCNPIISGLYQGAGGPGFGAQ
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             35.7%; Score 468.5; DB 4; Length 641; 41.4%; Pred. No. 9.3e-35;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Sequence 6258, Application US/09543681A Patent No. 6605709
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Query Match
Best Local Similarity 41.4%;
Matches 106; Conservative 4
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                   US-09-543-681A-6258
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           US-09-543-681A-6258
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APPLICANT: Gary Breton et. al
APPLICANT: Gary Breton et. al
TITLE OF INVENTION: NUCLEIC ACID AND AMINO ACID SEQUENCES RELATING TO KLEBSIELLA
TITLE OF INVENTION: NEUMONIAE FOR DIAGNOSTICS AND THERAPEUTICS
FILE REPERENCE: 2709.2004001
CURRENT APPLICATION NUMBER: US/09/489,039A
CURRENT FILING DATE: 2000-01-27
PRIOR APPLICATION NUMBER: US 60/117,747
PRIOR FILING DATE: 1999-01-29
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     RPMAADNKTLGRFQLTDIPAAPRGIPQIEVTFDIDKNGIVSVKAKDLGTQKEQTIVIQSN 174
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       35.8%; Score 471; DB 3; Length 307; 41.6%; Pred. No. 1.9e-35;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Query Match 35.7%; Score 469; DB 4; Length 638; Best Local Similarity 45.0%; Pred. No. 8.3e-35; Matches 108; Conservative 38; Mismatches 86; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     46; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ; Sequence 8996, Application US/09489039A; Patent No. 6610836
                                                                                                                                                                                                                          REFERENCE/DOCKET NUMBER: P50475
TELECOMMUNICATION INFORMATION:
TELEPHONE: 610-270-4478
                       CLASSIFICATION: 435
PRIOR APPLICATION DATA:
APPLICATION UNMER: 60/017670
FILING DATE: 14-MAY-1996
ATTORNEY/AGENT INFORMATION:
NAME: Gimmi, Edward R
REGISTRATION NUMBER: 38,891
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          TYPE: PRT
ORGANISM: Klebsiella pneumoniae
                                                                                                                                                                                                                                                                                                                                                                               481:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 MOLECULE TYPE: No. 6348328e
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   240 GAQGPKGGSGSGPTI 254
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  09-MAY-1997
                                                                                                                                                                                                                                                                                                                                                                         INFORMATION FOR SEQ ID NO: 4
SEQUENCE CHARACTERISTICS:
LENGTH: 307 amino acids
TYPE: amino acid
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Best Local Similarity 41.69
Matches 106, Conservative
                                                                                                                                                                                                                                                                                  TELEPHONE: 610-270-44
TELEFAX: 610-270-5090
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SEQ ID NO 8996
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US-09-489-039A-8996
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uncette-Stamm and David Bush
NUCLEIC ACID AND AMINO ACID SEQUENCES RELATING TO
ENTEROCOCCUS FAECIUM FOR DIAGNOSTICS AND THERAPEUTICS
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                                                          VSAKNALESYAFNMKSAVEDEGLKGKISEADKKKVLDKCQEVISWLDANTLAEKDEFEHK
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                                                                                                                                                                                                                                                    137 RKELESVANPIISGAY-GAAGGAPGGAGGFPRAGGFPGG 174
                                                                                                                                                                                         213 RKELEQVCNPIISGLYQGAGGPGPGGFGAQGPKGGSGSG 251
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  NUMBER OF SEQUENCES: 7310
CORRESPONDENCE ADDRESS:
ADDRESSEE: GENOME THERAPEUTICS CORPORATION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Query Match 35.0%; Score 460.5; DB 4; Best Local Similarity 53.8%; Pred. No. 4e-34; Matches 91; Conservative 33; Mismatches 44;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     CURRENT APPLICATION DATA:
APPLICATION UNMBER: US/09/107,532A
FILING DATE: 30-Jun-1998
PRIOR APPLICATION DATA:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 NAME/KEY: misc_feature
LOCATION: (B) LOCATION 1...536
SEQUENCE DESCRIPTION: SEQ ID NO: 6930:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      NAME: Ariniello, Pamela Deneke
REGISTRATION NUMBER: 40,489
REFERENCE/DOCKET NUMBER: GTC-01
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        APPLICATION NUMBER: 60/085,598
FILING DATE: 14 May 1998
APPLICATION NUMBER: 60/051571
FILING DATE: July 2, 1997
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ORGANISM: Enterococcus faecium
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     APPLICANT: Lynn A Doucette-Stamm TITLE OF INVENTION: NUCLEIC ACID
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ZIP: 02354
COMPUTER READABLE FORM:
MEDIUM TYPE: CD/ROM ISO9660
COMPUTER: PC
                                                                                                                                                                                                                                                                                                                                                                                                                  Sequence 6930, Application US/09107532A Patent No. 6583275 GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           OPERATING SYSTEM: <Unknown>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      STREET: 100 Beaver Street
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 TELECOMMUNICATION INFORMATION:
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TELEFAX: (781)893-8277
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ATTORNEY/AGENT INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 INFORMATION FOR SEQ ID NO: 6930:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        CITY: Waltham
STATE: Massachusetts
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             SOFTWARE: ASCII
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                                                                                                                                                                                                                                                                                                                                                                                          US-09-107-532A-6930
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Fatent No. 6747137

GENERAL INFORMATION:
FAPLICATION:
FILE OF INVENTION: WOLLEIC ACID AND AMINO ACID SEQUENCES RELATING TO CANDIDA ALBICAN
TITLE OF INVENTION: WOLLEIC ACID AND THERAPEUTICS
TITLE OF INVENTION: WOLLEIC ACID AND THERAPEUTICS
TITLE OF INVENTION: WOMBER: US/09/248,796A

CURRENT APPLICATION NUMBER: US/09/248,796A

CURRENT FILING DATE: 1998-02-13
FRIOR FILING DATE: 1998-02-13
FRIOR FILING DATE: 1998-08-13
NUMBER OF SEQ ID NOS: 28208
SEQUENCE OF SEQUENCE OF SEQUENCE OF SEQUENCE OF SEQUENCE OF SEQUENCE OF SEQUENCE OF SEQUENCE OF SEQUENCE OF SEQUENCE OF SEQUENCE OF SEQUENCE OF SEQUENCE OF SEQUENCE OF SEQUENCE OF SEQUENCE OF SEQUENCE OF SEQUENCE OF SEQUENCE OF SEQUENCE OF SEQUENCE OF SEQUENCE OF SEQUENCE OF SEQUENCE OF SEQUENCE OF SEQUENCE OF SEQUENCE OF SEQUENCE OF SEQUENCE OF SEQUENCE OF SEQUENCE OF SEQUENCE OF SEQUENCE OF SEQUENCE OF SEQUENCE OF SEQUENCE OF SEQUENCE OF SEQUENCE OF SEQUENCE OF SEQUENCE OF SEQUENCE OF SEQUENCE OF SEQUENCE OF SEQUENCE OF SEQUENCE OF SEQUENCE OF SEQUENCE OF SEQUENCE OF SEQUENCE OF SEQUENCE OF SEQUENCE OF SEQUENCE OF SEQUENCE OF SEQUENCE OF SEQUENCE OF SEQUENCE OF SEQUENCE OF SEQUENCE OF SEQUENCE OF SEQUENCE OF SEQUENCE OF SEQUENCE OF SEQUENCE OF SEQUENCE OF SEQUENCE OF SEQUENCE OF SEQUENCE OF SEQUENCE OF SEQUENCE OF SEQUENCE OF SEQUENCE OF SEQUENCE OF SEQUENCE OF SEQUENCE OF SEQUENCE OF SEQUENCE OF SEQUENCE OF SEQUENCE OF SEQUENCE OF SEQUENCE OF SEQUENCE OF SEQUENCE OF SEQUENCE OF SEQUENCE OF SEQUENCE OF SEQUENCE OF SEQUENCE OF SEQUENCE OF SEQUENCE OF SEQUENCE OF SEQUENCE OF SEQUENCE OF SEQUENCE OF SEQUENCE OF SEQUENCE OF SEQUENCE OF SEQUENCE OF SEQUENCE OF SEQUENCE OF SEQUENCE OF SEQUENCE OF SEQUENCE OF SEQUENCE OF SEQUENCE OF SEQUENCE OF SEQUENCE OF SEQUENCE OF SEQUENCE OF SEQUENCE OF SEQUENCE OF SEQUENCE OF SEQUENCE OF SEQUENCE OF SEQUENCE OF SEQUENCE OF SEQUENCE OF SEQUENCE OF SEQUENCE OF SEQUENCE OF SEQUENCE OF SEQUENCE OF SEQUENCE OF SEQUENCE OF SEQUENCE OF SEQUENCE OF SEQUENCE OF SEQUENCE OF SEQUENCE OF SEQUENCE OF SEQUENCE 
                                                                                                                                                                                                                                                                                                                                                                                                                                                 PEATURE:
NAMB/KRY: MISC FEATURE
LOCATION: (143)..(144)
OTHER INFORMATION: The "Xaa" at positions 143-144 may be any amino acid residue.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ; NAME/KEY: MISC FEATURE
; LOCATION: (1927..(193)
; OTHER INFORMATION: The "Xaa" at positions 192-193 may be any amino acid residue.
US-09-581-001B-9
                                                                                                                                                                                                                                                                                                                                                NAME/KEY: MISC FEATURE
LOCATION: (124)..(124)
OTHER INFORMATION: The "Xaa" at position 124 may be any amino acid residue.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               EVIFDIDANGILINVIATDKSTGKANKITITNDKGRLSKEEIERMVQEAEKYKAEDEVQRE 151
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           152 RVSAKNALESYAFNMKSAVEDEG----LKGKISEADKKKVL---DKCQEVISWLDANTLA 204
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           65
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          32 KRNSTIPTKQTQIFTTYSDNQPGVLIQVYEGERAMTKDNNLLGRFELSGIPPAPRGVPQI
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            56;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         RIDTKGKL--CLFSKESDWXXKAGRTFLRGDHGKSCRRKDMAGKPPCHRL-
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Score 463; DB 4; Length 196; Pred. No. 5.7e-35;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        46; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     46; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ; Score 462.5; DB 4; Pred. No. 5.9e-35; 17; Mismatches 46
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        32; Mismatches
                                                   97203783.2
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-----QEEELEEIVOPIISKLY 190
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PRIOR FILING DATE: 1998-12-03
PRIOR APPLICATION NUMBER: EP 972
PRIOR FILING DATE: 1997-12-03
NUMBER OF SEQ ID NOS: 23
SOFTWARR: PATENTH VERSION 3.1
SEQ ID NO 9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       35.2%;
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ORGANISM: Candida albicans
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Conservative
                                                                                                                                                                                                                                                                                      ORGANISM: Homo sapiens
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Best Local Similarity
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Best Local Similarity
Matches 95; Conserv
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US-09-248-796A-19329
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                           325 NDDIXDLILLDVIPLSLGVAMQGNVFAPVVPRNTTVPTIKRRTFTTVADHQTTVQFPVYQ 384
                                                                                     62 GERAMTKDNNLLGRFELSGIPPAPRGVPQIEVTFDIDANGILNVTATDKSTGKANKITIT 121
                                                                                                            122 NDKGRLSKEEIERMVQEAEKYKAEDEVQRERVSAKNALESYAFNMKSAVEDEGLKGKISE 181
                                                                                                                                                                                                      445 NSIGRLSTEEIEKMISDAEKFKSSDDAFAKRHEQKQKLEAYVASVESTVTDPVLSAKLKK 504
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          417
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           125 GRLSKEEIERMVQEAEKYKAEDEVQRERVSAKNALESYAFNWKSAVEDEGLKGKISEADK 184
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  477 STLSEEBINKMIQEAEENREADALKKDKIETTVRAEGLINQLEKSITDQGEK---IDPKQ 533
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61
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2 SENVODLLLLDVAPLSLGLETAGGVMTALIKRNSTIPTKQTQIFTTYSDNQPGVLIQVYE
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Patent No. 5240706

TITLE OF INVENTION: INTRANASSAL ADMINISTATION OF MYCOPLASMA
TITLE OF INVENTION: INTRANASSAL ADMINISTATION OF MYCOPLASMA
TITLE OF INVENTION: 128

CUMBER OF SEQUENCES: 22

CUMBER OF SEQUENCES: 22

CREENT APPLICATION NUMBER: US/07/334,586

FILING DATE: 07-APR-1989
                                                                                                                                                                                                                                                                                                                                                                                                                        ; Patent No. 5240706
; APPLICANT: FAULDS, DARYL
; TITLE OF INVENTION: INTRANASSAL ADMINISTATION OF MYCOPLASMA
;HYOPNEUMONIAE ANTIGEN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      34.1%; Score 448.5; DB 6;
44.0%; Pred. No. 6e-33;
... Mismatches 65;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              185 KKVLDK-CQEVISWLDANTLAEKDEFEHKRKELEQV 219
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          34.1%; Score 448.5; DB 6;
44.0%; Pred. No. 6e-33;
ive 45; Mismatches 65;
                                                                                                                                                                                                                                                                182 ADKKKVLDKCOEVISWLDANTLAEKDEFEHKRKEL 216
                                                                                                                                                                                                                                                                                              : | |: ::: || SOS SAKDKIEAALSDALQTLE---IEESSADDYRKAEL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           NUMBER OF SEQUENCES: 22
CURRENT APPLICATION DATA:
APPLICATION NUMBER: US/07/334,586
FILING DATE: 07-APR-1989
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Best Local Similarity 44.04
Matches 95; Conservative
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             5240706-1
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Patent No. 6747137
GENERAL INFORMATION:
APPLICANT: Keith Weinstock et al
TITLE OF INVENTION: NUCLEIC ACID AND AMINO ACID SEQUENCES RELATING TO CANDIDA ALBICAN
TITLE OF INVENTION: POR DIAGNOSTICS AND THERAPEUTICS
TITLE OF INVENTION: 107196.132
CURRENT APPLICATION NUMBER: US/09/248,796A
CURRENT PILING DATE: 1999-02-12
PRIOR FILING DATE: 1998-02-13
PRIOR FILING DATE: 1998-02-13
PRIOR APPLICATION NUMBER: US 60/096,409
                                                                                                                            Sequence 3432, Application US/09134000C

Sequence 3432, Application US/09134000C

Patent No. 6617156

GENERAL INFORMATION:

TITLE OF INVENTION: WOCLETC ACID AND AMINO ACID SEQUENCES RELATING TO

TITLE OF INVENTION: BNTEROCOCCUS FAECALIS FOR DIAGNOSTICS AND THERAPEUTICS

FILE REFERENCE: 032796-032

CURRENT PILING DATE: 1998-08-13

PRIOR APPLICATION NUMBER: US/09/134,000C

CURRENT PILING DATE: 1997-08-15

NUMBER OF SEQ ID NOS: 6812

SOFTWARE: PatentIn version 3.1

LENTH: 281
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          RAMTKDNNLLGRFELSGIPPAPRGVPQIEVTFDIDANGILNVTATDKSTGKANKITITND 123
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  124 KGRLSKEBIERMVQEAEKYKAEDEVORERVSAKNALESYAFNMKSAVED 172
                         124 KGRLSKEEIERMVQEAEKYKAEDEVQRERVSAKNALESYAFNMKSAVED 172
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | || :|||||||::|| |:::| | :::| SG-LSDDEIERMVKDAEANAEADKQRKEEVDLRNDADAFLFTVDKTLDD 276
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Length 281;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Length 549;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              i LOCATION: (54)
; OTHER INFORMATION: Amino acid 54 is Xaa wherein Xaa = any
US-09-134-000C-3432
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Indels
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    DB 4;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    34.5%; Score 453.5; DB 4;
53.8%; Pred. No. 7.1e-34;
tive 30; Mismatches 47;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          34.1%; Score 448.5; DB 4;
41.9%; Pred. No. 5.3e-33;
iive 46; Mismatches 76;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           TYPE: PRT ORGANISM: Enterococcus faecalis
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          PRIOR FILING DATE: 1998-08-13
NUMBER OF SEQ ID NOS: 28208
SEQ ID NO 19897
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       TYPE: PRT
ORGANISM: Candida albicans
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Query Match
Best Local Similarity 41.9
Matches 90; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            NAME/KEY: MISC_FEATURE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Local Similarity
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US-09-248-796A-19897
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                                                                                                            RESULT 63
US-09-134-000C-3432
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Fatent No. 6559294

Fatent No. 6559294

GENERAL INFORMATION:

APPLICANT: Griffals, R.

TITLE OF INVENTION: thereof and uses thereof, in particular for the diagnosis, preventing the Print of Invention: and treatment of infection

FILE REFERENCE: 9710-003-999

CURRENT APPLICATION NUMBER: US/09/198,452A

WUMBER OF SEQ ID NOS: 6849
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                139 AEKYKAEDEVQRERVSAKNALESYAFNMKSAVEDEGLKGKISEADKKKVLDKCQEVISWL 198
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         199 DANTLAEKDEFEHKRKELEQVCNPIISGLYQGA-----GGPG--PGGFGAQGPKGGS 248
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      65 AMTKDNNLLGRFELSGIPPAPRGVPQIEVTFDIDANGILNVTATDKSTGKANKITITNDK 124
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Sequence 42542, Application US/09270767

Sequence 42542, Application US/09270767

Patent No. 6703491

GENERAL INFORMATION:
APPLICANT: Homburger et al.
TITLE OF INVENTION: Nucleic acids and proteins of Drosophila melanogaster
FILE REPERENCE.
CURRENT APPLICATION NUMBER: US/09/270,767

CURRENT FILING DATE: 1999-03-17

NUMBER OF SEQ ID NOS: 62517

SOFTWARE: PatentIN Ver. 2.0

SEQ ID NO 42542

LENGTH: 132
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    33.7%; Score 443; DB 4; Length 539; 56.4%; Pred. No. 1.7e-32; ive 26; Mismatches 35; Indels
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------KNVVKLQMLKMK 536
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ORGANISM: Drosophila melanogaster
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ORGANISM: Chlamydia pneumoniae
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     92; Conservative
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Best Local Similarity
Matches 92; Conserv;
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                                                                                              RESULT 68
US-09-198-452A-543
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                                                                                                                                                                                                                                                                                                                                                                                                                                               LENGTH: 539
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                                                     141 KYKAEDEVQRERVSAKNALESYAFNMKSAVED-EGLKGKISEADKKKVLDKCQEVISWLD 199
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             61 KFABEDKKLKERIDTRNELESYAYSLKNQIGDKEKLGGKLSSEGKETMEKAVERKIEWIE 120
                                                                                                                       125 GRLSKEEIERWVQEAEKYKAEDEVQRERVSAKNALESYAFNMKSAVEDEGLKGKISEADK 184
                                                                                                                                                                     477 STLSEREINKMIQEAEENREADALKKOKIETTVRAEGLINQLEKSITDQGEK---IDPKQ 533
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                                                                                                                                                                                                                                                                                                                                                                                  Sequence 10, Application US/08441139
Fatent No. 5773245
GENERAL INFORMATION:
FAPLICANT: Mittrup, Dr. Karl D.
APPLICANT: Mittrup, Dr. Karl D.
APPLICANT: Robinson, Anne S.
TITLE OF INVENTION: METHODS FOR INCREASING SECRETION OF TITLE OF INVENTION: RECOMBINANTLY EXPRESSED PROTEINS
UNMBER OF SEQUENCES: 20
CORRESPONDENCE ADDRESS:
ADDRESSEE: SCULLY, SCOTT, MURPHY & PRESSER
STREET: 400 Garden City Plaza
CITY: Garden City Plaza
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          33.9%; Score 445; DB 1; Length 168; 56.0%; Pred. No. 2.1e-33; Eive 29; Mismatches 39; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy disk
COMPUTER: Floppy disk
COMPUTER: Floppy disk
COMPUTER: THE PC COMPATIBLE
OPERATING SYSTEM: PC-DOS/MS-DOS
SOFTWARE: PatentIn Release #1.0, Version #1.25
CURRENT APPLICATION DATA:
APPLICATION NUMBER: US/08/441,139
FILING DATE: 15-MAY-1995
CLASSIFICATION: A35
PRIOR APPLICATION DATA:
APPLICATION NUMBER: US 08/089,997
FILING DATE: 06-JUL-1993
ATTORNEY/AGENT INFORMATION:
NAME: Didiglio, Frank S.
REGISTRATION NUMBER: 31,346
REGISTRATION NUMBER: 31,346
TELERCOMMUNICATION INFORMATION:
TELECOMMUNICATION INFORMATION:
TELERCOMMUNICATION INFORMATION:
TELERCOMMUNICATION INFORMATION:
TELERCOMMUNICATION INFORMATION:
TELERCOMMUNICATION INFORMATION:
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                                                                                                                                                                                                                                                     185 KKVLDK-CQEVISWLDANTLAEKDEFEHKRKELEQV 219
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TELEX: 230 901 SANS UR
INFORMATION FOR SEQ ID NO:
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Best Local Similarity 56.04
Matches 89; Conservative
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STRANDEDNESS: single
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US-08-441-139-10
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TITLE OF INVENTION: NUCLEIC ACID AMINO ACID SEQUENCES RELATING TO CANDIDA ALBICANS.
TITLE OF INVENTION: NUCLEIC ACID AND THERAPEUTICS
TITLE OF INVENTION: POR DIAGNOSTICS AND THERAPEUTICS
TITLE OF INVENTION: POR DIAGNOSTICS AND THERAPEUTICS
CURRENT APPLICATION NUMBER: US/09/248, 796A
CURRENT FILING DATE: 1999-02-12
PRIOR PILING DATE: 1999-02-13
PRIOR PILING DATE: 1998-02-13
PRIOR PILING DATE: 1998-02-13
PRIOR PILING DATE: 1998-02-13
PRIOR PILING DATE: 1998-02-13
PRIOR PILING DATE: 1998-03-13
PRIOR PILING DATE: 1998-03-13
PRIOR FILING DATE: 1998-03-13
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APPLICANT: NO. 6472142eborn, Mathieu
APPLICANT: No. 6472142eborn, Mathieu
ASPLICANT: Danah-Van Oorschot, Astrid
TITLE OF INVENTION: METHODS AND MEANS FOR INDUCING APOPTOSIS BY INTERFERING WITH
TITLE OF INVENTION: BIP-LIKE PROTEINS
TITLE REPERENCE: 2906-4940405
CURRENT APPLICATION NUMBER: US/09/581,001B
CURRENT PAPLICATION NUMBER: PCT/ML98/00688
PRIOR PELICATION NUMBER: PCT/ML98/00688
PRIOR PILING DATE: 1998-12-03
PRIOR PAPLICATION NUMBER: EP 97203783.2
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---EASRPFIERVM 282
                                                                                                                                                                                                                                                                      122 NDKGRLSKEEIERMVQEAEKYKAEDEVQ-----RERVSAKNALESYAFNMKSAVEDEGLK 176
                                                                                                      62 ADRQDDVLLLDVIPLSLGLETMGGIVEKLIQRNSTIPTTAGOVFTTFKDGQTGLDVHVLQ 121
                                                                                                                                                            62 GERAMTKDNNLLGRFELSGIPPAPRGVPQIEVTFDIDANGILNVTATDKSTGKANKITIT 121
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40; Gaps
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72; Indels
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Best Local Similarity 80.7%; Pred. No. 1.2e-27;
Matches 71; Conservative 11; Mismatches 6;
  44; Mismatches
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          US-09-581-001B-10; Sequence 10, Application US/09581001B; Sequence 10, Application US/09581001B; Patent No. 6472142; GENERAL INFORMATION:
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  94; Conservative
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US-09-248-796A-17616
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  Matches
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                                                                                                                                                                                         APPLICANT: Keith Weinstock et al
TITLE OF INVENTION: NUCLEIC ACID AND AMINO ACID SEQUENCES RELATING TO CANDIDA ALBICAN
TITLE OF INVENTION: POR DIAGNOSTICS AND THERAPEUTICS
FILE REPERENCE: 107196.132
CURRENT APPLICATION NUMBER: US/09/248,796A
CURRENT FILING DATE: 1999-02-12
PRIOR APPLICATION NUMBER: US 60/074,725
PRIOR APPLICATION NUMBER: US 60/096,409
PRIOR FILING DATE: 1998-08-13
PRIOR FILING DATE: 1998-08-13
NUMBER OF SEQ ID NOS: 28208
SEQ ID NO 17735
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 . LOCATION: (66)
; OTHER INFORMATION: Identity of amino acid sequences at the above locations are unkno
US-09-248-796A-17735
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          114 KANKITITNDKGRLSKEEIERMVQEAEKYKAEDEVQRERVSAKNALESYAFNMKSAVEDE 173
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              174 GLKGKISEADKKKVLDKCQEVISWLDANTLAEK-DE------FEHKRKELEQVC 220
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             GENERAL INFORMATION:
APPLICANT: Goldman, Barry S.
APPLICANT: Hinkle, Gregory J.
APPLICANT: Slater, Steven C.
APPLICANT: Wiegand, Roger C.
APPLICANT: Wiegand, Roger C.
FITLE OF INVENTION: Myxcoccus xanthus Genome Sequences and Uses Thereof FILE REFERENCE: 38-10(1584)8 CURRENT APPLICATION NUMBER: US/09/902,540
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       SENVODLLLLDVAPLSLGLETAGGVMTALIKRNSTIPTKOTQIFTTYSDNOPGVLIQVYE
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 32;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Query Match 30.4%; Score 400; DB 4; Length 654; Best Local Similarity 37.9%; Pred. No. 2.1e-28; Matches 91; Conservative 47; Mismatches 70; Indels
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Pred. No. 3e-28;
                                                                                                            Sequence 17735, Application US/09248796A Patent No. 6747137
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Sequence 15923, Application US/09902540 Patent No. 6833447
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PRIOR APPLICATION NUMBER: 60/217,883
PRIOR FILING DATE: 2000-07-10
NUMBER OF SEQ ID NOS: 16825
SEQ ID NO 15523
LENGTH: 298
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37.6%;
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; ORGANISM: Myxococcus xanthus
US-09-902-540-15923
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          TYPE: PRT
ORGANISM: Candida albicans
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Query Match
Best Local Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          NAME/KEY: UNSURE
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Sequence 3242, Application US/09540236
Patent No. 6673910
GENERAL INFORMATION:
GENERAL INFORMATION:
GENERAL INFORMATION:
TITLE OF INVENTION: FOR DIAGNOSTICS AND THERAPEUTICS
TITLE OF INVENTION: FOR DIAGNOSTICS AND THERAPEUTICS
FILE REFERENCE: 2709.2005-001
CURRENT PAPLICATION NUMBER: US/09/540,236
CURRENT FILING DATE: 2000-04-04
NUMBER OF SEQ ID NOS: 3840
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APPLICANT: GATY Breton et. al
TITLE OF INVENTION: NUCLEIC ACID AND AMINO ACID SEQUENCES RELATING TO KLEBSIELLA
TITLE OF INVENTION: NUCLEIC ACID AND AMINO ACID SEQUENCES RELATING TO KLEBSIELLA
TITLE OF INVENTION: NUCLEIC ACID AND THERAPEUTICS
FILE REFERENCE: 2709.2004001
CURRENT APPLICATION NUMBER: US/09/489,039A
CURRENT FILING DATE: 1099-01-29
PRIOR FILING DATE: 1999-01-29
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   -----EVQRERVSAKNALESYAFNMKSAV 170
                                                                                                                                                                                                                                                           126 RLSKERIERMVQEAEKYKAEDEVQR----BRVSAKNALESYAFNMKSAVEDEGLKGKISE 181
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          62 GERAMIKDNNILLGRPELSGIPPAPRGVPQIEVTPDIDANGILNVTATDKSTGKANKITIT 121
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                2 SENVQDLLLLDVAPLSLGLETAGGVMTALIKRNSTIPTKQTQIFTTYSDNQPGVLIQVYE 61
                                                                      6 QDLLLLDVAPLSLGLETAGGVMTALIKRNSTIPTKQTQIFTTYSDNQPGVLIQVYEGERA
                                                                                                                                                                   66 MIKDNNLLGRFELSGIPPAPRGVPQIEVTFDIDANGILNVTATDKSTGKANKITITNDKG
                                                                                                                                                                                                                                                                                          22; Gaps
                        25; Gaps
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                                                                                                                                                                                                                                                                                                                                                       182 ADKKKVLDKCOEVISWLDANTLAE-----KDEFEHKRKELEQV 219
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  Pred. No. 3.1e-24;
3; Mismatches 70;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Query Match 25.4%; Score 334; DB 4; L. Best Local Similarity 36.7%; Pred. No. 2.4e-22; Matches 83; Conservative 48; Mismatches 73;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Sequence 11583, Application US/09489039A
Patent No. 6610836
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         122 NDKGRLSKEBIERMVQEAEKYKAED-
Best Local Similarity 38.4%; Pro
Matches 86; Conservative 43;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                NUMBER OF SEQ ID NOS: 14342
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ; ORGANISM: M.catarrhalis
US-09-540-236-3242
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 JS-09-489-039A-11583
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US-09-540-236-3242
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Sequence 22906, Application US/09252991A

Patent No. 6551795

GRANBRAL INFORMATION:
APPLICATION:
APPLICATION:
APPLICATION:
APPLICATION:
APPLICATION:
AERGINOSA FOR DIAGNOSTICS AND THERAPEUTICS

TITLE OF INVENTION:
AERGINOSA FOR DIAGNOSTICS AND THERAPEUTICS

CURRENT APPLICATION NUMBER: US/09/252,991A

CURRENT APPLICATION NUMBER: US 60/074,788

PRIOR FILING DATE: 1999-02-18

PRIOR FILING DATE: 1998-07-27

NUMBER OF SEQ ID NOS: 33142

SEQ ID NO 22906

LENGTH 633
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 amino acid residue.
                                                                                                                                                                                                               LOCATION: (1467..(146)
OTHER INFORMATION: The "Xaa" at position 146 may be any amino acid residue.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            LOCATION: (164\overline{1}..(164)
OTHER INFORMATION: The "Xaa" at position 164 may be any amino acid residue.
                                                                                                                                                                                                                                                                                                           LOCATION: (153\overline{\mathbf{J}}..(153)
OTHER INFORMATION: The "Xaa" at position 153 may be any amino acid residue.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        at position 158 may be any amino acid residue.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   LOCATION: (192\overline{Y}..(192) OTHER INFORMATION: The "Xaa" at position 192 may be any amino acid residue
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             50 DNOPGVLIQVYEGERAMTKDNNLLGRFELSGIPPAPRGVPQIEVTFDIDANGILNVTATD 109
                                                                                                                                                                                                                                                                                                                                                                                                                                at position 156 may be any amino acid residue
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        63
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       DNQPIVIIKVYEGERPLIKDNHLLGIFDLIGIPPAPRGVPQIEVIFEIDVNGILRVTAED
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Gaps
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       LOCATION: (1877..(189)
OTHER INFORMATION: The "Xaa" at positions 187-189 may be any
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ; Score 376; DB 4; Length 192;
; Pred. No. 6.1e-27;
11; Mismatches 15; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         110 KSTGKANKITITNDKGRLSKEEIERMVQEAEKYKAEDE 147
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Pseudomonas aeruginosa
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  28.6%;
  PRIOR FILING DATE: 1997-12-03
NUMBER OF SEQ ID NOS: 23
SOFTWARR: Patentin version 3.1
SEQ ID NO 10
                                                                                                                                                                                                                                                                                                                                                                                                                                                                          NAME/KEY: MISC FEATURE
LOCATION: (158)..(158)
OTHER INFORMATION: The "Xaa"
                                                                                                                                                                                                                                                                                                                                                                                                        LOCATION: (156)..(156)
OTHER INFORMATION: The "Xaa"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Query Match
Best Local Similarity 73.55
Matches 72; Conservative
                                                                                                                                                                                                                                                                                                                                                                             NAME/KEY: MISC FEATURE LOCATION: (156)...(156)
                                                                                                                                             ORGANISM: Homo sapiens
                                                                                                                                                                                           NAME/KEY: MISC FEATURE
                                                                                                                                                                                                                                                               FEATURE:
NAME/KEY: MISC_FEATURE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         NAME/KEY: MISC FEATURE
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US-09-252-991A-22906
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                                                                                                 LENGTH: 192
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                                                                                                                         TYPE: PRT
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셤 ઠે 8 27.0%; Score 354.5; DB 4; Length 623;

Query Match

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APPLICANT: Gary L. Breton et al.
TITLE OF INVENTION: NUCLEIC ACID AND AMINO ACID SEQUENCES RELATING TO ACINETOBACTER
TITLE OF INVENTION: BAUMANNII FOR DIAGNOSTICS AND THERAPEUTICS
FILE FOR INVENTION: BAUMANNII FOR DIAGNOSTICS AND THERAPEUTICS
CURRENT APPLICATION NUMBER: US/09/328,352
CURRENT FILING DATE: 1999-06-04
NUMBER OF SEQ ID NOS: 8252
SEQ ID NO 7730
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             TITLE OF INVENTION: HEAT SHOCK GENES AND PROTEINS FROM
TITLE OF INVENTION: HEAT SHOCK GENES AND PROTEINS FROM
TITLE OF INVENTION: PUMIGATUS
TITLE OF INVENTION: PUMIGATUS
FILE REFERENCE: 870109.411
CURRENT APPLICATION NUMBER: US/09/207,388
CURRENT FILING DATE: 1998-12-08
NUMBER OF SEQ ID NOS: 102
SOFTWARE: FastSEQ for Windows Version 3.0
SEQ ID NO 12
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              63 ERAMTKDNNLLGRFELSGIPPAPRGVPQIEVTFDIDANGILNVTATDKSTGKANKITITN 122
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        4 NVQD-LLLLLDVAPLSLGLETAGGVMTALIKRNSTIPTKQTQIFTTYSDNQPGVLIQVYEG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       13 DKGRLSKEEIERMVQEAEKYKAEDE----VQRERVSAKNALESYAFNMKSAVE-----
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                                                                                                                                                                                                                                                                                                         Length 620;
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21.7%; Score 285; DB 4; Length 41
Best Local Similarity 62.9%; Pred. No. 4.7e-18;
Matches 56; Conservative 11; Mismatches 22; Indels
                                                                                                                                                                                                                                                                                                         DB 4;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                172 -----DEGLKGKISEADKKKVLDKCOEVISWLDA 200
                                                                                                                                                                                                                                                                                                       Query Match 24.3%; Score 319.5; DB Best Local Similarity 37.7%; Pred. No. 5.3e-21 Matches 81; Conservative 37; Mismatches 77
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            67 TKDNNLLGRFELSGIPPAPRGVPQIEVTF 95
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                RESULT 80
US-09-556-877-301
Sequence 301. Application US/09556877
; Patent No. 6432916
; GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Sequence 12, Application US/09207388 Patent No. 6497880 GENERAL UNFORMATION:
APPLICANT: Wishiewski, Jan
                                                                                                                                                                                                              ; TYPE: PRT
; ORGANISM: Acinetobacter baumannii
US-09-328-352-7730
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ; ORGANISM: Neisseria meningitidis US-09-207-388-12
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Sequence 7673, Application US/09543681A

Patent No. 6605709

GENERAL INFORMATION:
APPLICANT: GARY BRETON
TITLE OF INVENTION: NUCLEIC ACID AND AMINO ACID SEQUENCES RELATING TO PROTEUS MIRABIL
TITLE OF INVENTION: DIAGNOSTICS AND THERAPEUTICS
FILE REFERENCE: 2709.1002-001
CURRENT APPLICATION NUMBER: US/09/543,681A
CURRENT APPLICATION NUMBER: US 60/128,706
PRIOR FILING DATE: 1999-04-09
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                452 VSDCRSLARFTLRGIPPMAAGGAHIRVTFQVDADGLLSVSAMEKSTGVEASVQVKPSYG- 510
                                                                                                                                                                                                                                                                                 390 ELLLLDVIPLSLGLETMGGLVEKVIPRNTTIPVARAQEFTTFKÖGQTAMSIHVMQGEREL 449
                                                                                                                                                                                                                                                                                                                               67 TKDNNLLGRFELSGIPPAPRGVPQIEVTFDIDANGILNVTATDKSTGKANKITITNDKGR 126
                                                                                                                                                                                                                                                                                                                                                                                                                          127 LSKEEIERMVQEAEKYKAEDEVQ-----RERVSAKNALESYAFNMK-----SAVEDEGL 175
                                                                                                                                                                                                                                                                                                                                                                                                                                                     |: || |::: | || |::
LTDGEIATMIKDSMSY-AEQDIQARMLAEQKVEAARVLESLTSALAADAALLSAAERQAI 567
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       511 LSDTEIANMIQSSMENAKEDLQARRLABQKVEAARVLES----LTAALQED---AHLLTE 563
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            7 DLLLLDVAPLSLGLETAGGVMTALIKRNSTIPTKQTQIFTTYSDNQPGVLIQVYEGERAM
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                                                                                                                                                                                                                                    7 DLLLLDVAPLSLGLETAGGVMTALIKRNSTIPTKQTQIFTTYSDNQPGVLIQVYEGERAM
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                                                                                                                                                                                         20;
                                                                                                                                           DB 4; Length 621;
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                                                                                                                                        %; Score 333; DB 4; Length 62:
%; Pred. No. 3e-22;
35; Mismatches 83; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            568 DAAAEQVRAAAAGDDADAIKEAIKNIDTQT----QEFAARRMD 606
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 176 KG---KISEADKKKVLDKCQEVISWLDANTLAEKDEFEHKRKE 215
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         183 DKKKVLDKCQEVISWLDANTLAEKDE-----FEHKRKELEQ 218
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DEKTAIDNV-----VDTLIESVEGTDPVAIENAIKQLDK 597
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Patent No. 6562958
GENERAL INFORMATION:
                                                TYPE: PRT
ORGANISM: Klebsiella pneumoniae
                                                                                                                                        25.3%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ch 25.0%;
1 Similarity 36.5%;
81; Conservative 3:
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                                                                                                                                                                 Best Local Similarity 38.1%
Matches 85; Conservative
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SEQ ID NO 7673
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Query Match
Best Local Similarity
                                                                                        US-09-489-039A-11583
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US-09-543-681A-7673
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              , ORGANISM: Prote
US-09-543-681A-7673
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US-09-328-352-7730
    SEQ ID NO 11583
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                                                                                                                                             Query Match
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ZIP: 98104-7092
COMPUTER READABLE FORM:
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                                                              243 GPKGGS 248
                                                                                                177 PPAGGS 182
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                                                                                                                                                                                                                                                                                                                                                                                                                                                             ; TYPE: PRT
; ORGANISM: Chlamydia
US-09-598-419-301
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                CITY: Seattle
STATE: Washing
                                                                                                                                                                          US-09-598-419-301
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                                                                                                                                                                                                                                                                                                                                                                                                                        SEQ ID NO 301
LENGTH: 183
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                60 LHKREDKQRKGASDVKNEADGMIFRAEKAVKD--YHDKIPAELVKEIEEHIEKVRQAIK- 116
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                                                                                                                                                                                                                                                                                                                                                                                                                          22; Gaps
Apay

APPLICANT: Skeiky, Yasir

APPLICANT: Pling, Steve

TITLE OF INVENTION: COMPOSITIONS AND METHODS FOR TREATMENT AND

TITLE OF INVENTION: DIAGNOSIS OF CHLAMYDIAL INFECTION

FILE REFERENCE: 210121.469CS

CURRENT APPLICATION NUMBER: US/09/556,877

CURRENT PILING DATE: 2000-04-19

SOFTWARE: Parton

SOFTWARE: Parton

SOFTWARE: Parton

SOFTWARE: Parton
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ; Sequence 301, Application US/09620412C
; Patent No. 6448234
; GENERAL INFORMATION:
; APPLICANT: Steven P. Fling
; TITLE OF INVENTION: COMPOSITIONS AND METHODS FOR TREATMENT AND
; TITLE OF INVENTION: DIAGNOSIS OF CHLAMYDIAL INFECTION
; FILLE REPERENCE: 210121.469C7
; CURRENT APPLICATION NUMBER: US/09/620,412C
; CURRENT FILING DATE: 2000-07-20
; NUMBER OF SEQ ID NOS: 363
; SOFTWARE: FastSEQ for Windows Version 3.0/4.0
; SEQ ID NO 301
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   19.3%; Score 254; DB 4; Length 183; 36.6%; Pred. No. 1.1e-15;
                                                                                                                                                                                                                                                                                                                                                                                       DB 4; Length 183;
                                                                                                                                                                                                                                                                                                                                                                                                                        64; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          32; Mismatches 64; Indels
                                                                                                                                                                                                                                                                                                                                                                                   19.3%; Score 254; DB 4; 36.6%; Pred. No. 1.1e-15; tive 32; Mismatches 64
                                                                                                                                                                                                                                                                                                                                                                       Query Match
Best Local Similarity 36.6%
.....hes 68; Conservative
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                                                                                                                                                                                                                                                                                                        TYPE: PRT
ORGANISM: Chlamydia
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ORGANISM: Chlamydia
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US-09-620-412C-301
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LENGTH: 183
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81 IPPAPRGVPQIEVTFDIDANGILNVTATDKSTGKANKITITNDKGRLSKEEIERMVQEAE 140
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            APPLICANT: Reed, Steven G.
APPLICANT: Campos-Neto, Antonio
APPLICANT: Webb, John R.
APPLICANT: Dillon, Davin C.
APPLICANT: Skeiky, Yasir A.W.
APPLICANT: Elishmania ANTIGENS FOR USEIN THE THERAPY AND NUMBER OF SEQUENCES: 87
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               22;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Query Match 19.3%; Score 254; DB 4; Length 183; Best Local Similarity 36.6%; Pred. No. 1.1e-15; Matches 68; Conservative 32; Mismatches 64; Indels 2
                                                                                   APPLICANT: Skeiky, Yasir A.W.
APPLICANT: Skeiky, Yasir A.W.
APPLICANT: Scholler, John
TITLE OF INVENTION: COMPOUNDS AND METHODS FOR TREATMENT AND
TITLE OF INVENTION: DIAGNOSIS OF CHLAMYDIAL INFECTION
FILE REFERENCE: 210121.469C6
CURRENT APPLICATION NUMBER: US/09/598,419
CURRENT FILING DATE: 2000-06-20
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COMPUTER: IBM PC compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
SOFTWARE: PatentIn Release #1.0, Version #1.30
CURRENT APPLICATION DATA:
APPLICATION NUMBER: US/09/183,861
FILING DATE:
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                                                                                                                                                                                                                                                                                                              NUMBER OF SEQ ID NOS: 357
SOFTWARE: FastSEQ for Windows Version 3.0/4.0
Sequence 301, Application US/09598419
Patent No. 6565856
GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ; Sequence 49, Application US/09183861; Patent No. 6365165; GENERAL INFORMATION:
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ADDRESSEE: SEED and BERRY LLP
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 6300 Columbia Center,
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TYPE: amino acid
STRANDEDNESS: single
TOPOLOGY: linear
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   GENERAL INFORMATION:
APPLICANT: Reed, St
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SEQ ID NO 49
LENGTH: 136
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APPLICANT:
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                                                                                                                                                                                                                                                                                     Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   APPLICANT:
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Patent No. 6375955

GENERAL INFORMATION:
APPLICANT: Campos-Neto, Antonio
APPLICANT: Cambo, John R.
APPLICANT: Skeiky, Yasir A.W.
TITLE OF INVENTION: LEISHMANIA ANTIGENS FOR USEIN THE THERAPY AND
NUMBER OF SEQUENCES: 87
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          184 KKKVLDKCQEVISWLDANTLAEKDEFEHKRKELEQVCNPIISGLYQGAGGPG 235
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Length 136;
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MEDIUM TYPE: Floppy disk
COMPUTER: IBM FC compatible
OPPERATING SYSTEM: PC-DOS/MS-DOS
SOFTWARE: Patentin Release #1.0, Version #1.30
CURRENT APPLICATION DATA:
FILING DATE: US/09/022,765
FILING DATE: U2-FEB-1998
CLASSIFICATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           3: SEED and BERRY LLP
6300 Columbia Center, 701 Fifth Avenue
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                  PRIOR APPLICATION DATA:
APPLICATION DATA:
APPLICATION NUMBER: 09/022,765
FILING DATE: 12-FEB-1998
ATTORNEY/AGENT INFORMATION:
NAME: Maki, David J.
REGISTRATION NUMBER: 31,392
REFERENCE/DOCKET NUMBER: 210121.420C3
TELEPHONE: (206) 622-4900
TELEPHONE: (206) 622-4900
TELEPHONE: (206) 622-4900
TELEPHONE: (206) 622-4900
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44.6%; Pred. No. 2.3e
cive 28; Mismatches
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TELEPHONE: (206) 622-4900
TELEFAX: (206) 622-4900
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ORGANISM: Leishmania chagasi
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NAME: MAKA, David J.
REGISTRATION NUMBER: 31,392
REFERENCE/DOCKET NUMBER: 21.
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INFORMATION FOR SEQ ID NO: SEQUENCE CHARACTERISTICS:
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Matches 50; Conservative
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MOLECULE TYPE: peptide
ORIGINAL SOURCE:
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ADDRESSEE: SEED and
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125 GRLSKEBIERMVQEAEKYKAEDEVQRERVSAKNALESYAFNMKSAVEDEGLKG-KISEAD 183
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APPLICANT: Campos-Neto, Antonio
APPLICANT: Webb, John R.
APPLICANT: Dillon, Davin C.
APPLICANT: Skelky, Yasir A.W.
TITLE OF INVENTION: THERAPY AND DIAGNOSIS OF LEISHWANIASIS
FILE REFERENCE: 210121.420C5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             TITLE OF INVENTION: LEISHMANIA ANTIGENS FOR USE IN THE TITLE OF INVENTION: THERAPY AND DIAGNOSIS OF LEISHMANIASIS FILE REFERENCE: 210121.420C6
                                                                                                                                                                                      Indels
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18.9%; Score 248.5; DB 4;
Best Local Similarity 44.6%; Pred. No. 2.3e-15;
Matches 50; Conservative 28; Mismatches 33;
                                                                                                                                    DB 3;
                                                                                                                                  18.9%; Score 248.5; DB 344.6%; Pred. No. 2.3e-15;
                                                                                                                                                             Best Local Similarity 44.6%; Pred. No. 2.3e-
Matches 50; Conservative 28; Mismatches
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Patent No. 6500437
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Campos-Neto, Antonio
Webb, John R.
Dillion, Davin C.
Skeiky, Yasir A.W.
Bhatia, Ajay
Coler, Rhea
Peter Probst
                                                    ORGANISM: Leishmania chagasi
US-09-022-765-49
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ORGANISM: Leishmania chagasi
MOLECULE TYPE: peptide ORIGINAL SOURCE:
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APPLICANT: Coler, Rhea
APPLICANT: Probst, Peter
APPLICANT: Brannon, Mark
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                                                                                                                                                                                                                                                                                                                            1; Gaps
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APPLICANT: Webb, John R.
APPLICANT: Webb, John R.
APPLICANT: Skeiky, Yasir A.W.
APPLICANT: Bhatia, Ajay
APPLICANT: Bhatia, Ajay
APPLICANT: Bhatia, Ajay
TITLE OF INVENTION: LEISHMANIA ANTIGENS FOR USE IN THE
TITLE OF INVENTION: LEISHMANIA ANTIGENS FOR LEISHMANIASIS
FILE REFERENCE: 210121.420C7
CURRENT APPLICATION NUMBER: US/09/639,206A
CURRENT FILING DATE: 2000-08-14
NUMBER OF SEQ ID NOS: 112
SOFTWARE: FREESEQ for Windows Version 4.0
                                                                                                                                                                                                                   DB 4; Length 136;
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                                                                                                                                                                                                               Query Match
18.9%; Score 248.5; DB 4; Length 1
Best Local Similarity 44.6%; Pred. No. 2.3e-15;
Matches 50; Conservative 28; Mismatches 33; Indels
CURRENT APPLICATION NUMBER: US/09/565,501A CURRENT FILING DATE: 2000-05-05 NUMBER OF SEQ ID NOS: 112
                                                         SOFTWARE: FastSEQ for Windows Version 4.0 SEQ ID NO 49 LENGTH: 136
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GENERAL INFORMATION:

APPLICANT: Reed, Steven G.

APPLICANT: Campos-Neto, Antonio

APPLICANT: Webb, John R.

APPLICANT: Dillon, Davin C.

APPLICANT: Skeiky, Yasir A.W.

APPLICANT: Bhatia, Ajay
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APPLICANT: Campos-Neto, Antonio
APPLICANT: Webb, John R.
                                                                                                                            ; TYPE: PRT
; ORGANISM: Leishmania chagasi
US-09-565-501A-49
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ORGANISM: Leishmania chagasi
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Matches 50; Conserv
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US-09-874-923-49
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Sequence 15138, Application US/09902540

Patent No. 6833447

Patent No. 6833447

APPLICANT: Goldman, Barry S.

APPLICANT: Hinkle, Gregory J.

APPLICANT: Wiegand, Roger C.

APPLICANT: Wiegand, Roger C.

APPLICANT: Wiegand, Roger C.

APPLICANT: Wiegand, Roger C.

PITER REFERENCE: 38-10(15449) B.

CURRENT APPLICATION NUMBER: US/09/902,540

CURRENT PILING DATE: 2000-07-10

PRIOR FILING DATE: 2000-07-10

PRIOR FILING DATE: 2000-07-10

PRIOR FILING DATE: 2000-07-10

SEQ ID NO 15138

LENGTH: 535

TYPE: PRI
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TITLE OF INVENTION: LEISHANIA ANTIGENS FOR USE IN THE TITLE OF INVENTION: LEISHANIA ANTIGENS FOR USE IN THE TITLE OF INVENTION: THERAPY AND DIAGNOSIS OF LEISHMANIASIS FILE REFERENCE: 21021.42008 FILE REFERENCE: 21021.42008 FILE SPELIGN NUMBER: US/09/874,923 CURRENT FILING DATE: 2001-06-04 NUMBER OF SEQ ID NOS: 122 SOFTWARE: FASISEQ for Windows Version 4.0 SEQ ID NO 49
                                                                                                                                                                                                                                                                                                                                                                                                                 33; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Indels
                                                                                                                                                                                                                                                                                                                                                      Query Match 18.9%; Score 248.5; DB 4; Best Local Similarity 44.6%; Pred. No. 2.3e-15; Matches 50; Conservative 28; Mismatches 33;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Query Match 17.8%; Score 234.5; DB 4 Best Local Similarity 38.3%; Pred. No. 3.1e-13; Matches 49; Conservative 31; Mismatches 47
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; Sequence 14235, Application US/09902540
; Patent No. 683347
; GENERAL INFORMATION:
                                                                                                                                                                                                                                            ; TYPE: PRT
; ORGANISM: Leishmania chagasi
US-09-874-923-49
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ORGANISM: Myxococcus xanthus
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508 ADIQOSIQ 515
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US-09-902-540-10349
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Patent No. 6472142
Fatent APPLICATION NUMBER: US/09/581,001B
FATENT APPLICATION NUMBER: PFT/NL98/00688
FATENT APPLICATION NUMBER: EP 97203783.2
FATENT FATENT PAPENT us-09-6

"...man, Barry S.

APPLICANT: Hinkle, Gregory J.
APPLICANT: Stater, Steven C.
TITLE OF INVENTION: Myxococcus xanthus Genome Sequences and Uses Thereof TITLE OF INVENTION: Myxococcus xanthus Genome Sequences and Uses Thereof CURRENT APPLICATION NUMBER: Us/09/902,540
CURRENT FILING DATE: 2001-07-10
PRIOR PILING DATE: 2000-07-10
PRIOR PILING DATE: 2000-07-10
NUMBER OF SEQ ID NOS: 16825
SEQ ID NO 14235
LENGTH: 506
TYPE: P.
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US-09-902-540-10349
Sequence 10349, Application US/09902540
Parent No. 6833447
GENERAL INFORMATION:
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; ORGANISM: Myxococcus xanthus
US-09-902-540-14235
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US-09-581-001B-6
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Page

all Mile, Gregory J.

APPLICANT: Slater, Steven C.

TITLE OF INVENTION: Mysococcus xanthus Genome Sequences and Uses Thereof

FILE REPERENCE: 38-10 (15849) B.

CURRENT APPLICATION NUMBER: US/09/902,540

CURRENT APPLICATION NUMBER: 05/09/902,540

PRIOR APPLICATION NUMBER: 06/217,883

PRIOR FILING DATE: 2000-07-10

NUMBER OF SEQ ID NOS: 16825

SEQ ID NO 10349

LENGTH: 690

TYPE: NOTE: NOTE: NOTE: NOTE: NOTE: NOTE: NOTE: NOTE: NOTE: NOTE: NOTE: NOTE: NOTE: NOTE: NOTE: NOTE: NOTE: NOTE: NOTE: NOTE: NOTE: NOTE: NOTE: NOTE: NOTE: NOTE: NOTE: NOTE: NOTE: NOTE: NOTE: NOTE: NOTE: NOTE: NOTE: NOTE: NOTE: NOTE: NOTE: NOTE: NOTE: NOTE: NOTE: NOTE: NOTE: NOTE: NOTE: NOTE: NOTE: NOTE: NOTE: NOTE: NOTE: NOTE: NOTE: NOTE: NOTE: NOTE: NOTE: NOTE: NOTE: NOTE: NOTE: NOTE: NOTE: NOTE: NOTE: NOTE: NOTE: NOTE: NOTE: NOTE: NOTE: NOTE: NOTE: NOTE: NOTE: NOTE: NOTE: NOTE: NOTE: NOTE: NOTE: NOTE: NOTE: NOTE: NOTE: NOTE: NOTE: NOTE: NOTE: NOTE: NOTE: NOTE: NOTE: NOTE: NOTE: NOTE: NOTE: NOTE: NOTE: NOTE: NOTE: NOTE: NOTE: NOTE: NOTE: NOTE: NOTE: NOTE: NOTE: NOTE: NOTE: NOTE: NOTE: NOTE: NOTE: NOTE: NOTE: NOTE: NOTE: NOTE: NOTE: NOTE: NOTE: NOTE: NOTE: NOTE: NOTE: NOTE: NOTE: NOTE: NOTE: NOTE: NOTE: NOTE: NOTE: NOTE: NOTE: NOTE: NOTE: NOTE: NOTE: NOTE: NOTE: NOTE: NOTE: NOTE: NOTE: NOTE: NOTE: NOTE: NOTE: NOTE: NOTE: NOTE: NOTE: NOTE: NOTE: NOTE: NOTE: NOTE: NOTE: NOTE: NOTE: NOTE: NOTE: NOTE: NOTE: NOTE: NOTE: NOTE: NOTE: NOTE: NOTE: NOTE: NOTE: NOTE: NOTE: NOTE: NOTE: NOTE: NOTE: NOTE: NOTE: NOTE: NOTE: NOTE: NOTE: NOTE: NOTE: NOTE: NOTE: NOTE: NOTE: NOTE: NOTE: NOTE: NOTE: NOTE: NOTE: NOTE: NOTE: NOTE: NOTE: NOTE: NOTE: NOTE: NOTE: NOTE: NOTE: NOTE: NOTE: NOTE: NOTE: NOTE: NOTE: NOTE: NOTE: NOTE: NOTE: NOTE: NOTE: NOTE: NOTE: NOTE: NOTE: NOTE: NOTE: NOTE: NOTE: NOTE: NOTE: NOTE: NOTE: NOTE: NOTE: NOTE: NOTE: NOTE: NOTE: NOTE: NOTE: NOTE: NOTE: NOTE: NOTE: NOTE: NOTE: NOTE: NOTE: NOTE: NOTE: NOTE: NOTE: NOTE: NOTE: NOTE: NOTE: NOTE: NOTE: NOTE: NOTE: NOTE: NOTE: NOTE: NOTE: NOTE: NOTE: NOTE: NOTE: NOTE: NOTE: NOTE: NOTE: NOTE: NOTE
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APPLICANT: Goldman, Barry S.
APPLICANT: Hinch, Gregory J.
APPLICANT: Hinch, Gregory J.
APPLICANT: Hinch, Gregory J.
APPLICANT: Hinch Grew C.
APPLICANT: Wiegand, Roger C.
TITLE OF INVENTION: Myxococcus xanthus Genome Sequences and Uses Thereof FILE REFERENCE: 38-10(15849)B
FILE REFERENCE: 38-10(15849)B
CURRENT APPLICATION NUMBER: 60/217,883
PRIOR FILING DATE: 2001-07-10
PRIOR FILING DATE: 2000-07-10
NUMBER OF SEQ ID NOS: 16825
SEQ ID NO 11750
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Query Match 16.4%; Score 216; DB 4; Length 1027; Best Local Similarity 30.8%; Pred. No. 4e-11; Matches 45; Conservative 37; Mismatches 60; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Length 690;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              51; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Query Match 16.5%; Score 217; DB 4; Best Local Similarity 31.9%; Pred. No. 1.8e-11; Matches 43; Conservative 35; Mismatches 51.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | | | | :::::|
|---RYSPEELQKQLQVSKESVKAAEE 1003
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         123 DKGRLSKEEIERMVQ-EAEKYKAEDE 147
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Sequence 11750, Application US/09902540 Patent No. 6833447
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     124 ----KGRLSKEEIE 133
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      594 TPEAVKARLAQLESE 608
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ORGANISM: Myxococcus xanthus
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ORGANISM: Myxococcus xanthus
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FOR INDUCING APOPTOSIS BY INTERFERING WITH
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           148 VQRERVSAKNALESYAFNMKSAVEDEGLKGKISEADKKKV----LDKCQEVISWLDANTL 203
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | : | : | : | : | : | : | 659 ---DDMKAKLEALNEKAQGLAVKLYEQAAAAQQAQEGAEGAQATGNAGDDV 706
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   204 AEKDEFEHKRKELEQVCNPIISGLYQGAGGPGGFGAQGPKGGSGSGPTI 254
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            14;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                , DB 2; Length 714;
5.8e-10;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          71; Indels
        Sequence 3, Application US/08472534
Patent No. 5919620
GENERAL INFORMATION:
APPLICANT: Hamel, Josee
APPLICANT: Brodeur, Bernard R
APPLICANT: Martin, Denis
TITLE OF INVENTION: HEAT SHOCK PROTEIN HSP72 FROM
TITLE OF INVENTION: STREPTOCOCCUS PNEUMONIAE
NUMBER OF SEQUENCES: 6
CORRESPONDENCE ADDRESS:
                                                                                                                                                                                                                                                                                                                                                                                                                                SOFTWARE: Patentin Release #1.0, Version #1.30 CURRENT APPLICATION DATA:
APPLICATION NUMBER: US/08/472,534
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                SEQUENCE 11, APPLICATION OF OFFICIAL OF SEQUENCE 15, PARTELL INFORMATION:
APPLICANT: NO. 6472142
TITLE OF INVENTION: METHODS AND MEANS FOR INDITION OF INTILE REPREBUCE: 2906-4940US
CURRENT FILIA 2906-4940US
CURRENT FILIAN DATE: 2006-07-24
PRIOR APPLICATION NUMBER: US/09/581,001B
PRIOR FILING DATE: 1998-12-03
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ch 15.3%; Score 201; DB
1 Similarity 31.6%; Pred. No. 5.8e
54; Conservative 32; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   CLASSIFICATION: 424
ATTORNEY/AGENT INFORMATION:
NAME: Haley Jr, James F
REGISTRATION NUMBER: 27,794
REFERENCE/DOCKET NUMBER: Biovac-2
TELECOMMUNICATION INFORMATION:
TELEPHONE: 212-596-9000
                                                                                                                                                                                                                             E: Fish & Neave
1251 Avenue of the Americas
                                                                                                                                                                                                                                                                                        New York
: United States of America
                                                                                                                                                                                                                                                                                                                                                                                           COMPUTER: IBM PC compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Sequence 11, Application US/09581001B
                                                                                                                                                                                                                                                                                                                                                                          Floppy disk
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         : 714 amino acids
amino acid
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          TELEX: 14-8367
INFORMATION FOR SEQ ID NO:
SEQUENCE CHARACTERISTICS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    212-596-9090
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                TOPOLOGY: linear
MOLECULE TYPE: protein
                                                                                                                                                                                                                                                                                                                                 ZIF: 10020
COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Query Match
Best Local Similarity
Matches 54; Conserv
                                                                                                                                                                                                                                                                      New York
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      FILING DATE:
                                                                                                                                                                                                                                                                                                           COUNTRY: UN
                                                                                                                                                                                                                               ADDRESSEE:
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US-09-581-001B-11
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      TELEFAX:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       US-08-472-534-3
                                                                                                                                                                                                                                                STREET:
US-08-472-534-3
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LOCATION: (123)...(124)
JTHER INFORMATION: The "Xaa" at positions 123-124 may be any amino acid residue.
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   LOCATION: (79)..(80)
OTHER INFORMATION: The "Xaa" at positions 79-80 may be any amino acid residue.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       at positions 59-61, may be any amino acid residue.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          LOCATION: (72)...(73)
OTHER INFORMATION: The "Xaa" at positions 72-73 may be any amino acid residue.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       at positions 97-98 may be any amino acid residue
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       NAME/KEY: MISC_FEATURE
LOCATION: (133]..(133)
OTHER INFORMATION: The "Xaa" at position 133 may be any amino acid residue.
FEATURE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    LOCATION: (110)...(110)
OTHER INFORMATION: The "Xaa" at position 110 may be any amino acid residue.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      LOCATION: (82)...(82)
OTHER INFORMATION: The "Xaa" at position 82 may be any amino acid residue.
                                                                                                                                                                                                                                                                                                      LOCATION: (21)...(21)
OTHER INFORMATION: The "Xaa" at position 21 may be any amino acid residue.
                                                                                                                                                                                                                                                                                                                                                                                                                            LOCATION: (36)..(36)
OTHER INFORMATION: The "Xaa" at position 36 may be any amino acid residue.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               COCATION: (46)...(46)
OTHER INFORMATION: The "Xaa" at position 46 may be any amino acid residue.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    may be any amino acid residue.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    at position 91 may be any amino acid residue
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    LOCATION: (67)...(67)
OTHER INFORMATION: The "Xaa" at position 67 may be any amino acid residue
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         OTHER INFORMATION: The "Xaa" at position 77 may be any amino acid residue
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 THER INFORMATION: The "Xaa" at position 84
PRIOR APPLICATION NUMBER: EP 97203783.2
PRIOR FILING DATE: 1997-12-03
NUMBER OF SEQ ID NOS: 23
SOFTWARE: PatentIn version 3.1
SEQ ID NO 11
LENGTH: 222
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 OCATION: (97)...(98)
THER INFORMATION: The "Xaa"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          "Xaa"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              COCATION: (91)...(91)

THER INFORMATION: The
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OTHER INFORMATION: The
                                                                                                                                                                                                                                                                    NAME/KEY: MISC_FEATURE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     LOCATION: (59)..(61)
OTHER INFORMATION: The
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      FEATURE:
NAME/KEY: MISC FEATURE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 NAME/KEY: MISC_FEATURE
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                                                                                                                                                                                                                                                                                                                                                                                             NAME/KEY: MISC_FEATURE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                NAME/KEY: MISC FEATURE
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       VAME/KEY: MISC FEATURE
                                                                                                                                                                                       TYPE: PRT
ORGANISM: Homo sapiens
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              NAME/KEY: MISC_FEATURE
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              COCATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                COCATION:
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          OCATION
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amino acid residue.
                                                                                                                                                                                                                                                                                                                                                   "Xaa" at positions 212-213 may be any amino acid residue.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Sequence 14034, Application US/09902540

Sequence 14034, Application US/09902540

Fatent No. 6833447

GRNERALI INFORMATION:

APPLICANT: Goldman, Barry S.

APPLICANT: Blater, Steven C.

APPLICANT: Miegand, Roger C.

TITLE OF INVENTION: Myxococcus xanthus Genome Sequences and Uses Thereof FILE REFERENCE: 38-10(15849)B

CURRENT APPLICATION NUMBER: US/09/902,540

CURRENT FILING DATE: 2001-07-10

PRIOR FILING DATE: 2000-07-10

NUMBER OF SEQ ID NOS: 16825

SEQ ID NO 14034
                                                                                                                                                                LOCATION: (2087..(208)
OTHER INFORMATION: The "Xaa" at position 208 may be any amino acid residue.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 4
                       "Xaa" at position 199 may be any amino acid residue.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    NAME/KEY: MISC FEATURE
LOCATION: (220)...(220)
OTHER INFORMATION: The "Xaa" at position 220 may be any amino acid residue.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     162
                                                                                                                                                                                                                                                                     amino acid residue
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                residue
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       50 DNQPGVLIQVYEGERAMTKDNNLLGRFELSGIPPAPRGVPQI-----EVTFDIDANGIL 103
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               104 NVTATOKSTGKANKITITNDK-GRLSKEEIERMVQEAEKYKAEDEVQRERVSAKNALESY
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Indels 17; Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                amino acid
                                                                                                                                                                                                                                                                                                                                                                                                                                  amino acid
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              4 DNQPTVTIKVYEGERPLAKDNHLLGTFDLTNIXPAPRGVPQIXHLDRCEWYSSSD
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Length 222;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Length 608;
                                                                                LOCATION: (203)..(204)
OTHER INFORMATION: The "Xaa" at positions 203-204 may be any
                                                                                                                                                                                                                                                                                                                                                                                                                                    any
                                                                                                                                                                                                                                                                     "Xaa" at position 210 may be any
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                at position 218 may be any
                                                                                                                                                                                                                                                                                                                                                                                                                                  ğ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       14.7%; Score 193.5; DB 4;
40.3%; Pred. No. 5.6e-10;
live 15; Mismatches 42;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Score 190.5; DB 4;
Pred. No. 4.4e-09;
                                                                                                                                                                                                                                                                                                                                                                                                                                    may
                                                                                                                                                                                                                                                                                                                                                                                                                               215
                                                                                                                                                                                                                                                                                                                                                                                                                               "Xaa" at position
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   14.5%;
29.8%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                "Xaa"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     TYPE: PRT
CRGANISM: Myxococcus xanthus
US-09-902-540-14034
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Query Match
Best Local Similarity 40.34
Matches 50; Conservative
  LOCATION: (199)..(199)
OTHER INFORMATION: The
                                                                                                                                                                                                                                                                                                                                   LOCATION: (212)..(213)
OTHER INFORMATION: The
                                                                                                                                                                                                                           NAME/KEY: MISC FEATURE LOCATION: (210)...(210)
OTHER INFORMATION: The
                                                                                                                                                                                                                                                                                                                                                                                       NAME/KEY: MISC FEATURE LOCATION: (215)...(215)
OTHER INFORMATION: The
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           LOCATION: (218)..(218)
OTHER INFORMATION: The
FEATURE:
                                                                                                                                                                                                                                                                                                                                                                                                                                        FEATURE:
NAME/KEY: MISC FEATURE
TOTAL (218) (218)
                                                                                                                        FEATURE:
NAME/KEY: MISC FEATURE
                                                                                                                                                                                                                                                                                        FEATURE:
NAME/KEY: MISC_FEATURE
                                                             NAME/KEY: MISC_FEATURE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Query Match
Best Local Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   163 AFNM 166
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |:::
114 AYSL 117
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            US-09-902-540-14034
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               US-09-581-001B-11
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     셤
                                          residue
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               NAME/KEY: MISC FEATURE
LOCATION: (1737..(174)
DIHER INFORMATION: The "Xaa" at positions 173-174 may be any amino acid residue.
                                                                                                                        any amino acid residue
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               at positions 162-163 may be any amino acid residue.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        LOCATION: (170\overline{)}... (171) OTHER INFORMATION: The "Xaa" at positions 170-171 may be any amino acid residue
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                LOCATION: (1767. (179)
OTHER INFORMATION: The "Xaa" at positions 178-179 may be any amino acid residue
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          amino acid residue
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        amino acid residue
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      NAME/KEY: MISC_FEATURE
LOCATION: (1587..(158)
OTHER INFORMATION: The "Xaa" at position 158 may be any amino acid residue.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           LOCATION: (1977..(197)
OTHER INFORMATION: The "Xaa" at position 197 may be any amino acid residue.
                                                                                                                                                                                                        any amino acid residue
                                                                                                                                                                                                                                                                                                                                                                    residue
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 residue
                                                                                                                                                                                                                                                                                        residue
                                                                                                                                                                                                                                                                                                                                                                                                                                                  amino acid residue
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      at position 189 may be any amino acid residue.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    residue
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    residue
                                          at positions 135-138 may be any amino acid
                                                                                                                                                                                                                                                                                        amino acid
                                                                                                                                                                                                                                                                                                                                                                      amino acid
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               be any amino acid
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    amino acid
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    amino acid
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           NAME/KEY: MISC FEATURE
LOCATION: (1847)..(187)
OTHER INFORMATION: The "Xaa" at positions 184-187 may be any
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          be any
                                                                                                                        may be
                                                                                                                                                                                                                                                                                        any
                                                                                                                                                                                                                                                                                                                                                                      any
                                                                                                                                                                                                                                                                                                                                                                                                                         LOCATION: (1567. (156)
OTHER INFORMATION: The "Xaa" at position 156 may be any
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    be any
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    may be any
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  LOCATION: (1817..(182)
OTHER INFORMATION: The "Xaa" at positions 181-182 may
                                                                                                                                                                                                        þ
                                                                                                                                                                                                                                                                                      þe
                                                                                                                                                                                                                                                                                                                                                                    position 153 may be
                                                                                                                      positions 142-146
                                                                                                                                                                                                        may
                                                                                                                                                                                                                                                                                        may
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             at position 165 may
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        may
                                                                                                                                                          NAME/KEY: MISC FEATURE
LOCATION: (149)...(149)
OTHER INFORMATION: The "Xaa" at position 149
                                                                                                                                                                                                                                                                                    position 151
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             LOCATION: (195)..(195)
OTHER INFORMATION: The "Xaa" at position 195
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    position 192
                                                                                                                        at
                                                                                                                                                                                                                                                                                    "Xaa" at
                                                                                                                                                                                                                                                                                                                                                                    "Xaa" at
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    at
                                          "Xaa"
                                                                                                                        "Xaa"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 "Xaa"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               "Xaa"
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    "Xaa"
                                                                            NAME/KEY: MISC FEATURE LOCATION: (142)..(146) OTHER INFORMATION: The
                LOCATION: (135)..(138)
OTHER INFORMATION: The
                                                                                                                                                                                                                                            NAME/KEY: MISC FEATURE LOCATION: (151)...(151)
OTHER INFORMATION: The
                                                                                                                                                                                                                                                                                                                        NAME/KEY: MISC FEATURE LOCATION: (153)
OTHER INFORMATION: The
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       NAME/KEY: MISC FEATURE LOCATION: (162)...(163)
OTHER INFORMATION: The
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            IAME/KEY: MISC FEATURE COCATION: (189)
OTHER INFORMATION: The
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     NAME/KEY: MISC FEATURE LOCATION: (165)...(165)
OTHER INFORMATION: The
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THER INFORMATION: The
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       REATURE:
NAME/KEY: MISC FEATURE
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NAME/KEY: MISC_FEATURE
NAME/KEY: MISC FEATURE
                                                                                                                                                                                                                                                                                                                                                                                                        NAME/KEY: MISC FEATURE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   MISC FEATURE (170)..(171)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 NAME/KEY: MISC FEATURE
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Gaps

19;

95; Indels

32; Mismatches

62; Conservative

Matches

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ORGANISM: Artificial Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ORGANISM: Artificial Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Patentin Ver. 2.0
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Matches 51; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                NUMBER OF SEQ ID NOS:
SOFTWARE: Patentin Ves
SEQ ID NO 172
LENGTH: 941
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       US-09-513-783A-172
                                     JS-09-710-279-1876
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   136
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                                         69 DNNLLGRFELSGIPPAPRGVPQIEVTFDIDANGILNVTATDKSTGKANKITITNDKGRLS 128
                                                                                                                                                                                                                                                                                         129 KEEIERMVQEAEKYKAEDEVQRERVSAKNALESY------AFNMKSAVEDEGLKG 177
                                                                                                                                                                                                                                                                                                                                      : | |:: | | :: | | | :: | | | | | | :: | | | | :: | :: | :: | | | :: | :: | :: | :: | :: | :: | :: | :: | :: | :: | :: | :: | :: | :: | :: | :: | :: | :: | :: | :: | :: | :: | :: | :: | :: | :: | :: | :: | :: | :: | :: | :: | :: | :: | :: | :: | :: | :: | :: | :: | :: | :: | :: | :: | :: | :: | :: | :: | :: | :: | :: | :: | :: | :: | :: | :: | :: | :: | :: | :: | :: | :: | :: | :: | :: | :: | :: | :: | :: | :: | :: | :: | :: | :: | :: | :: | :: | :: | :: | :: | :: | :: | :: | :: | :: | :: | :: | :: | :: | :: | :: | :: | :: | :: | :: | :: | :: | :: | :: | :: | :: | :: | :: | :: | :: | :: | :: | :: | :: | :: | :: | :: | :: | :: | :: | :: | :: | :: | :: | :: | :: | :: | :: | :: | :: | :: | :: | :: | :: | :: | :: | :: | :: | :: | :: | :: | :: | :: | :: | :: | :: | :: | :: | :: | :: | :: | :: | :: | :: | :: | :: | :: | :: | :: | :: | :: | :: | :: | :: | :: | :: | :: | :: | :: | :: | :: | :: | :: | :: | :: | :: | :: | :: | :: | :: | :: | :: | :: | :: | :: | :: | :: | :: | :: | :: | :: | :: | :: | :: | :: | :: | :: | :: | :: | :: | :: | :: | :: | :: | :: | :: | :: | :: | :: | :: | :: | :: | :: | :: | :: | :: | :: | :: | :: | :: | :: | :: | :: | :: | :: | :: | :: | :: | :: | :: | :: | :: | :: | :: | :: | :: | :: | :: | :: | :: | :: | :: | :: | :: | :: | :: | :: | :: | :: | :: | :: | :: | :: | :: | :: | :: | :: | :: | :: | :: | :: | :: | :: | :: | :: | :: | :: | :: | :: | :: | :: | :: | :: | :: | :: | :: | :: | :: | :: | :: | :: | :: | :: | :: | :: | :: | :: | :: | :: | :: | :: | :: | :: | :: | :: | :: | :: | :: | :: | :: | :: | :: | :: | :: | :: | :: | :: | :: | :: | :: | :: | :: | :: | :: | :: | :: | :: | :: | :: | :: | :: | :: | :: | :: | :: | :: | :: | :: | :: | :: | :: | :: | :: | :: | :: | :: | :: | :: | :: | :: | :: | :: | :: | :: | :: | :: | :: | :: | :: | :: | :: | :: | :: | :: | :: | :: | :: | :: | :: | :: | :: | :: | :: | :: | :: | :: | :: | :: | :: | :: | :: | :: | :: | :: | :: | :: | :: | :: | :: | :: | :: | :: | :: | :: | :: | :: | :: | :: | :: | :: | :: | :: | :: | :: | :: | :: | :: | :: | :: | :: | :: | 
9 LLLDVAPLSLGLETAGGVMTALIKRNSTIPTKQTQIFTTYSDNQPGVLIQVYEGERAMTK
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         DLVLLHVCPLTLGIETVGGVMTKLIPSNTVVPTKNSQIFSTASDNQPTVTIKVYE 56
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TITLE OF INVENTION: CONTROL OF GENE EXPRESSION BY GLUCOSE,
CALCIUM AND TEMBERATURE

GLUCHAR AND TEMBERATURE

CURRENT APPLICATION DATA:

PRICE OF SEQUENCES: 28

CURRENT APPLICATION NUMBER: US/07/354,988

PRICE APPLICATION NUMBER: 282,880

PRICE APPLICATION NUMBER: 282,880

FILING DATE: 05-DEC-1988

PRILING DATE: 01-JAN-1985

PRILING DATE: 01-JAN-1985
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Score 184; DB 6; Length 56;
Pred. No. 6.1e-10;
8; Mismatches 11; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       DB 6; Length 56;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          OF GENE EXPRESSION BY GLUCOSE
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Score 184; DB 6;
Pred. No. 6.1e-10;
8; Mismatches 11;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    564 QATLGTVQRLLDGGR---SALDSGNAAQ 588
                                                                                                                                                                                                                                                                                                                                                                                                                                    178 KISEADKKKVLDKCQEVISWLDANTLAE 205
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           CURRENT APPLICATION DATA:
APPLICATION NUMBER: US/07/354,988
FILING DATE: 19-MAY-1989
PRIOR APPLICATION DATA:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      APPLICATION NUMBER: 282,880
FILING DATE: 05-DEC-1988
APPLICATION NUMBER: 690,951
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        14.0%;
65.5%;
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APPLICANT: LEE, AMY S.
TITLE OF INVENTION: CONTROL.
CALCIUM AND TEMPERATURE
CALCIUM AND TEMPERATURE
NUMBER OF SEQUENCES: 28
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       14.0%;
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Best Local Similarity
Matches 36; Conserva
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Best Local Similarity
Matches 36; Conserv
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5196523-12
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5196523-12
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                                                                       APPLICAT: KIMMERLY, WILLIAM JOHN
TITLE OF INVENTION: STAPHYLOCOCCUS EPIDERMIDIS NUCLEIC ACIDS AND PROTEINS
FILE REFERENCE: PU3480US
CURRENT APPLICATION NUMBER: US/09/710,279
CURRENT APPLICATION NUMBER: 60/164,258
PRIOR APPLICATION NUMBER: 60/164,258
PRIOR FILING DATE: 1999-11-09
NUMBER OF SEQ ID NOS: 4472
SOFTWARE: Patentin Ver: 2.1
SEQ ID NO 1876
LENGTH: 337
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   OTHER INFORMATION: Description of Artificial Sequence: synthetic OTHER INFORMATION: amino acid sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           OTHER INFORMATION: Description of Artificial Sequence: GFP-HSP70
US-09-513-783A-172
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16.9%; Pred. No. 0.033;
tive 54; Mismatches 110; Indels
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APPLICANT: Kapur, Ravi
TITLE OF INVENTION: A System for Cell Based Screening
FILE REPERENCE: 97-022-L1
CURRENT APPLICATION NUMBER: US/09/513,783A
CURRENT FILING DATE: 2000-02-25
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Query Match 12.6%; Score 165; DB 4; Best Local Similarity 56.6%; Pred. No. 4.4e-07; Matches 30; Conservative 14; Mismatches 9
Sequence 1876, Application US/09710279
Patent No. 6703492
GENERAL INFORMATION:
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807 QCQEGKSEDQYCGPANRESAIWQIDREMLNLYIENEGKMIMQDKLEKERNDAKNAVEEYV 866
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⁸⁶⁷ YEMRDKU,SGEYEK-FVSEDDRNSFTLKLEDTENWLYEDGEDOPKOVYVDKUAELKNLGOP 925

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Search completed: April 6, 2005, 17:25:45 Job time: 49 secs

Sequence 2, Appli Sequence 7, Appli Sequence 1753, Ap Sequence 4, Appli Sequence 4, Appl Sequence 16, Appl Sequence 11, Appl

sequence 43, Appl Sequence 147, App Sequence 147, App Sequence 703, App

Sequence 4

Sequence 4, Appli Sequence 174, App Sequence 4141, Ap

Sequence

Title: Perfect score:

Sequence:

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Run on:

Scoring table:

Searched:

Database

Sequence 73, Appl Sequence 6, Appli Sequence 3524, Ap Sequence 4616, Ap

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15 US-10-841-207-2
16 US-10-841-207-2
16 US-10-10-841-207-2
17 US-10-10-841-207-2
18 US-09-759-010-4
18 US-09-759-010-4
19 US-09-935-642-13
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Sequence 3466, Ap
Sequence 255, Appl
Sequence 28, Appl
Sequence 97, Appl
Sequence 10, Appl
Sequence 10, Appl
Sequence 2, Appli
Sequence 2, Appli
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5, Appli
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                                                                                                6, 2005, 17:24:24; Search time 146 Seconds (without alignments) 586.680 Million cell updates/sec
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Sequence 146
Sequence 5,
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| cgn2_6/ptodata1/pubpaa/US06_PUBW_PUB.ppp:*
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| cgn2_6/ptodata1/pubpaa/US10B_PUBCOMB.ppp:*
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                  GenCore version 5.1.6
Copyright (c) 1993 - 2005 Compugen Ltd.
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US-10-380-408A-5
US-10-792-571-14
US-10-108-260A-3466
US-10-408-765A-255
US-10-316-253-28
US-10-316-253-29
US-10-316-253-97
US-09-761-534A-10
US-10-132-556A-10
US-10-132-556A-10
US-10-132-556A-1675
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Maximum Match 100%
Listing first 100 summaries
                                                                                                                                                      US-09-646-835-1_COPY_384_641
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                                                                        protein search, using sw model
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Gapop 10.0 , Gapext 0.5
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Maximum DB seq length: 200000000
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Match
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Sequence 1693, Ap Sequence 1723, Ap Sequence 673, Ap Sequence 75, Appl Sequence 11, Appl Sequence 204, Appl Sequence 264, Appl Sequence 724, Appl Sequence 724, Appl Sequence 724, Appl Sequence 724, Appl Sequence 724, Appl

Sequence 195814, Sequence 102982, Sequence 102982, Sequence 62493, A Sequence 62884, A Sequence 98, Appl Sequence 214, App Sequence 214, App Sequence 214, App

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Sequence 216 Sequence 356 Sequence 196 Sequence 156 Sequence 156 Sequence 156

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US-10-425-114-72128 US-10-425-114-72427 US-10-425-114-72533

17 14 16

1314 1314 1314 1314 1314 1309 1298.5 1258 1228.5 1228.5 1228.5

Score

Result 8

196148

Sequence 46662, A Sequence 62894, A Sequence 43651, A Sequence 156568, Sequence 43825, A Sequence 55946, A

Sequence 203543, Sequence 43012, A Sequence 156571,

Sequence 1

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FILE REFERENCE: 8969-014

CURRENT APPLICATION NUMBER: US/09/935,642

CURRENT FILING DATE: 2001-08-24

PRIOR APPLICATION NUMBER: PCT/GB97/02394

PRIOR FILING DATE: 1997-09-05

PRIOR PILING DATE: 1997-04-08

PRIOR PILING DATE: 1997-04-08

PRIOR PILING DATE: 1996-09-06

NUMBER OF SEQ ID NOS: 16

SOFTWARE: FASESEQ FOR WINDOWS VERSION 4.0

SOFTWARE: FASESEQ FOR WINDOWS VERSION 4.0

LENGTH: 641
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Best Local Similarity 100.
Matches 258; Conservative
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US-09-935-642-1
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63505, A
65274, A
193938,
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                               Sequence 59328, A
Sequence 61345, A
Sequence 63240, A
Sequence 63240, A
Sequence 63457, A
Sequence 63457, A
Sequence 65274, A
                                                                                                                                                                                                                                                                                                                                                                    APPLICANT: Srivateava, Pramod K.
TITLE OF INVENTION: COMPLEXES OF PEPTIDE BINDING FRAGMENTS OF HEAT-SHOCK
TITLE OF INVENTION: PROTEINS AND THEIR USE AS IMMUNOTHERAPEUTIC AGENTS
FILE REFERENCE: 8449-135
CURRENT APPLICATION NUMBER: US/09/759,010
CURRENT FILING DATE: 2001-01-12
NUMBER OF SEQ ID NOS: 11
SOFTWARE: Patentin Ver: 2.1
SEQ ID NO 3
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      1 KSENVQDLLLLDVAPLSLGLETAGGVMTALIKRNSTIPTKQTQIFTTYSDNQPGVLIQVY
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100.0%; Pred. No. 2.8e-95;
cive 0; Mismatches 0; Indels 0
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Publication No. US20030044795A1
GENERAL INFORMATION:
APPLICANT: LARSEN, Peter
APPLICANT: STEPHEN, Ochn
TITLE OF INVENTION: Blochemical Markers for the Human
TITLE OF INVENTION: Endometrium
                                            US-10-425-114-61345
US-10-425-114-62560
US-10-425-114-63457
US-10-425-114-63457
US-10-425-114-63505
US-10-437-963-193938
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US-10-425-114-57892
               US-10-425-114-55225
US-10-425-114-59328
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                                                                                                                                                                                                                                                    ALIGNMENTS
                                                                                                                                                                                                                                                                                                           US-09-759-010-3; Sequence 3, Application US/09759010; Patent No. US20010034042A1; GENERAL INFORMATION:
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Best Local Similarity 100.
Matches 258; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ; TYPE: PRT
; ORGANISM: Homo sapiens
US-09-759-010-3
               RESULT 2
US-09-935-642-1
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Query Match
100.0%; Score 1314; DB 10; Length 641;
Best Local Similarity 100.0%; Pred. No. 2.8e-95;
Matches 258; Conservative 0; Mismatches 0; Indels 0;
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; OTHER INFORMATION: Incyte ID No. US20030108871A1 1678695CD1
US-09-919-039-146
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100.0%; Pred. No. 2.8e-95;
tive 0; Mismatches 0;
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TITLE OF INVENTION: Use of Molecular Chaperones for the Enhanced Production of TITLE OF INVENTION: Secreted, Recombinant Proteins in Mammalian Cells FILE REPERENCE: 03-302-A CURRENT APPLICATION NUMBER: US/10/792,571
CURRENT APPLICATION NUMBER: US/10/792,571
PRIOR APPLICATION NUMBER: 60/483,505
PRIOR PILING DATE: 2003-06-27
NUMBER OF SEQ ID NOS: 22
SOFTWARE: PatentIn version 3.3
SEQ ID NO 14
LENGTH: 641
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; Publication No. US20040005560A1
; GENERAL INPORMATION:
; APPLICANT: HELIX RESEARCH INSTITUTE
; TITLE OF INVENTION: No. US20040005560A1e1 full length CDNA
; FILE REFERENCE: H1-A0106
; CURRENT APPLICATION NUMBER: US/10/108,260A
; CURRENT FILING DATE: 2002-03-27
; NUMBER OF SEQ ID NOS: 5458
; SOFTWARE: Patentin Ver. 2.1
; SEQ ID NO 3466
; LENGTH: 476
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100.0%;
Best Local Similarity 100.0%;
Matches 258; Conservative 0
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US-10-792-571-14
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US-10-108-260A-3466
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TITLE OF INVENTION: An HSp70 peptide stimulating Natural Killer (NK) cell activity
TITLE OF INVENTION: and uses thereof
FILE REPERENCE: E 2022 PCT
CURRENT APPLICATION NUMBER: US/10/380,408A
CURRENT FILING DATE: 2003-08-25
PRIOR APPLICATION NUMBER: EP 00119933.0
PRIOR FILING DATE: 2000-09-13
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           EGERAMTKONNLLGRFELSGIPPAPRGVPQIEVTFDIDANGILNVTATOKSTGKANKITI 120
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GENERAL INFORMATION:
APPLICANT: Chan, Sham-Yuen
APPLICANT: Tang, Heinyi Y
APPLICANT: Tang, Heinyi Y
APPLICANT: Wu, Yongjian
APPLICANT: Wu, Yongjian
APPLICANT: Wu, Yongjian
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SOFTWARE: PatentIn version 3.2
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CORGANISM: Homo sapiens
US-10-380-408A-5
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Best Local Similarity
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US-10-380-408A-5
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US-10-792-571-14
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Publication No. US20030162706A1
GENERAL INPORMATION:
APPLICANT: The Procter & Gamble Company
APPLICANT: Thompson, Larry
APPLICANT: Wang, Feng
APPLICANT: Wang, Feng
TITLE OF INVENTION: Anglogenesis Modulating Proteins
FILE REFERENCE: 865M
CURRENT APPLICATION UNMERR: US/10/316,253
CURRENT FILING DATE: 2002-12-10
                                                                                                                                                                                                                                 Score 1258; DB 14;
Pred. No. 7.5e-91;
7; Mismatches 5;
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Best Local Similarity 95.3%; Pred. No. 7.5e-91;
Matches 246; Conservative 7; Mismatches 5;
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PRIOR FILING DATE: 2002-02-08
NUMBER OF SEQ ID NOS: 308
SOFTWARE: PatentIn version 3.1
SEQ ID NO 97
LENGTH: 641
                      60/355,295
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2002-12-10
                 PRIOR APPLICATION NUMBER: US 60
PRIOR FILING DATE: 2002-02-08
NUMBER OF SEQ ID NOS: 308
SOFTWARE: Patentin version 3.1
SEQ ID NO 28
LENGTH: 641
                                                                                                                                                                                                                                   Query Match
Best Local Similarity 95.3%;
Matches 246; Conservative
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                                                                                                                                                 TYPE: PRT
ORGANISM: Rattus norvegicus
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CURRENT FILING DATE:
                                                                                                                                                                                         US-10-316-253-28
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                    EADKKKVLDKCQEVISWLDANTLAEKDEFEHKRKELEQVCNPIISGLYQGAGGPGGFG 240
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APPLICANT: Fahy, Boin D.
APPLICANT: Zhang, Bing
APPLICANT: Zhang, Bing
APPLICANT: Taylor, Steven W.
APPLICANT: Glenn, Gary W.
APPLICANT: Glenn, Gary W.
APPLICANT: Glenn, Gary W.
TITLE OF INVENTION: IDENTIFIED IN THE MITOCHONDRIAL PROTEOME
FILE REFERENCE: 660088.465;
CURRENT FILING DATE: 2003-04-04;
NUMBER OF SEQ ID NOS: 3077
SOFTWARE: FastSEQ for Windows Version 4.0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      98.8%; Score 1298.5; DB 16; Length 640; 99.6%; Pred. No. 4.7e-94; ive 0; Mismatches 0; Indels 1;
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; Sequence 28, Application US/10316253
; Publication No. US20030162706A1
; GENERAL INFORMATION:
; APPLICANT: The Procter & Gamble Company
; APPLICANT: Thompson, Larry
; APPLICANT: Greis, Kenneth
; TITLE OF INVENTION: Angiogenesis Modulating Proteins
; FILE REFERENCE: 8865M
; CURRENT APPLICATION NUMBER: US/10/316,253
                                                                                                                                                                                                                                                   Sequence 255, Application US/10408765A; Publication No. US20040101874A1; GENERAL INFORMATION:
                                                                                                    AQGPKGGSGSGPTIEEVD 258
                                                                                                                                               AQGPKGGSGSGPTIEEVD 476
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Matches 257; Conservative
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ORGANISM: Homo sapiens
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APPLICANT: Huang, Qian
APPLICANT: Richmod, Joan F.L.
APPLICANT: Richmod, Joan F.L.
APPLICANT: Richmod, Joan F.L.
APPLICANT: Cho, Bryan K.
APPLICANT: Cho, Bryan K.
APPLICANT: Cho, Bryan K.
APPLICANT: Elsen, Herman N.
APPLICANT: Young, Richard A.
TITLE OF INVENTION: In Vivo CTL Elicitation By Heat Shock
TITLE OF INVENTION: Total Fusion Proteins Maps To A Discrete Domain and is
TITLE OF INVENTION: CD4+T Cell-Independent
FILE REPRENCE: 0399.2006.003
TITLE OF INVENTION: WUMBER: US 000-01-16
PRIOR APPLICATION NUMBER: US 000-01-6
PRIOR APPLICATION NUMBER: US 60/176.143
PRIOR PILING DATE: 2000-01-01
PRIOR FILING DATE: 2000-01-14
NUMBER OF SEQ ID NOS: 25
SOFTWARE: PastSEQ for Windows Version 4.0
SEQ ID NOS: 25
384 KSENVODLLLLDVAPLSLGLETAGGVMTALIKRNSTIPTKQTQTFTTYSDNQPGVLIQVY 443
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                                                       EADKKKVLDKCQEVISWLDANTLAEKDEFEHKRKELEQVCNPIISGLYQGAGGPGGFG 240
                                                                             RADKKKVLDKCQEVISWLDSNTLAEKEEFFVHKREELERVCNPIISGLYQGAGAPGAGFG 623
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                                                                                                                                                                                                                                                            ; Sequence 10, Application US/09761534A
; Patent No. US20020146426A1
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                                                                                                                                                                 624 AQAPKGGSGSGPTIEEVD 641
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US-09-761-534A-10
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Best Local Similarity
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ORGANISM: Unknown
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Sequence 10, Application US/10885523 Publication No. US20050048079A1

RESULT 11 US-10-885-523-10

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APPLICANT: Huang, Qian
APPLICANT: Huang, Qian
APPLICANT: Richmond, Joan F.L.
APPLICANT: Cho, Bryan K.
APPLICANT: Cho, Janzhu
APPLICANT: Palliser, Deborah
APPLICANT: Chen, Jianzhu
APPLICANT: Chen, Jianzhu
APPLICANT: Chen, Jianzhu
APPLICANT: Chen, Jianzhu
APPLICANT: Chen, Jianzhu
APPLICANT: Voung, Richard A.
TITLE OF INVENTION: Protein Fusion Proteins Maps To A Discrete Domain and is
TITLE OF INVENTION: DATE: 2004-07-01
FILE REFERENCE: 0399-2006-003
CURRENT APPLICATION NUMBER: US/09/761,534
PRIOR FLIING DATE: 2004-07-01
PRIOR PLIING DATE: 2000-12-01
PRIOR APPLICATION NUMBER: US/09/761,534
PRIOR PLIING DATE: 2000-12-01
PRIOR PLIING DATE: 2000-01-14
PRIOR FILING DATE: 2000-01-14
PRIOR FILING DATE: 2000-01-14
SROID FILING DATE: 2000-01-14
NUMBER OF SEQ ID NOS: 25
SOTUMARE: FastSEQ for Mindows Version 4.0
SEQ ID NO 10
LENGTH. 642
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Publication No. US20030082629A1

GENERAL INFORMATION:

APPLICANT: Volloch, Vladimir

APPLICANT: Volloch, Vladimir

TITLE OF INVENTION: SCREENING METHODS FOR COMPOUNDS USEFUL

TITLE OF INVENTION: IN THE REGULATION OF CELL PROLIFERATION

FILE REPERENCE: A22367-PCT-USA-A 066290.0106

CURRENT APPLICATION NUMBER: US/10/132,556A

CURRENT APPLICATION NUMBER: 09/936,879

PRIOR PILING DATE: 2001-09-18

PRIOR FILING DATE: 2000-03-17

PRIOR FILING DATE: 2000-03-18

PRIOR FILING DATE: 1999-03-18
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US-10-885-523-10
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238 GF--GAQGPKGGSGSGPTIEEVD 258
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Publication No. US20040058326A1
GENERAL INFORMATION:
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US-10-841-207-2
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APPLICANT: Fahy, Eoin D.
APPLICANT: Tang, Bing
APPLICANT: Gloson, Bradford W.
APPLICANT: Gloson, Bradford W.
APPLICANT: Gloson, Gary W.
APPLICANT: Gloson, Gary W.
APPLICANT: Gloson, Gary W.
APPLICANT: Gloson, Gary W.
APPLICANT: Warnock, Dale E.
TITLE OF INVENTION: TARGETS FOR THERAPEUTIC INTERVENTION
TITLE OF INVENTION: IDENTIFIED IN THE MITOCHONDRIAL PROTEOME
FILE REFERENCE: 660088 465
CURRENT APPLICATION NUMBER OF SOURCEST
NUMBER OF SEQ ID NOS: 3077
SOFTWARE: PastSEQ for Windows Version 4.0
SEQ ID NO 1675
LENGTH: 641
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82.3%; Pred. No. 1.4e-78;
iive 16; Mismatches 15; Indels 16;
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                                                                                                                                                            Length 622;
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                                                                                                                                                            93.1%; Score 1223; DB 14;
100.0%; Pred. No. 4.2e-88;
iive 0; Mismatches 0;
SOFTWARE: FastSEQ for Windows Version 4.0 SEQ ID NO 2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               US-10-408-765A-1675
; Sequence 1675, Application US/10408765A
; Publication No. US20040101874A1
; GENERAL INFORMATION:
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218; Conservative
                                                                                                                                                                                                Matches 241; Conservative
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US-10-408-765A-1675
                                                                                  TYPE: PRT
ORGANISM: Homo sapien
                                                                                                                                                                             Best Local Similarity
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                                                                   LENGTH: 622
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Best Local S
Matches 218
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Sequence 2, Application US/10841207

Publication No: US20050009772A1

GRANGAL INFORMATION:

APPLICANT: Caprioli, Joseph

TITLE OF INVENTION: Methods and Compositions for the Treatment of Glaucoma and Other

TITLE OF INVENTION: Retinal Diseases

FILE REFERENCE: A-72263/TAL/WWR (468290-00515)

CURRENT APPLICATION NUMBER: US/10/841,207

CURRENT FILING DATE: Z004-05-06

FRIOR APPLICATION NUMBER: US 60/468,554
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                                Query Match
83.8%; Score 1100.5; DB 15; Lengt
Best Local Similarity 81.7%; Pred. No. 2.2e-78;
Matches 215; Conservative 23; Mismatches 20; Indels
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APPLICANT: Lee, Kevin
APPLICANT: Dixon, Alistair
APPLICANT: Brooksbank, Robert
TITLE OF INVENTION: Identification and Use of
FILE REFERENCE: WL-A-018199
CURRENT APPLICANTON NUMBER: US/10/205,331
CURRENT PELING DATE: 2002-07-24
PRIOR FILING DATE: 2001-07-27
NUMBER OF SEQ ID NOS: 117
SOFTWARE: PATENTIN OF: 2.1
SOFTWARE: PATENTIN OF: 2.1
SOFTWARE: PATENTIN OF: 2.1
SOFTWARE: PATENTIN OF: 2.1
                                                                                                            241 AQGPKGGSG-----SGPTIEEVD 258
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324 KSENVQDLLLLDVTPLSLGIETAGGVMTVLIKRNTTIPTKQTQTPTTYSDNQPGVLIQVY 383
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TITLE OF INVENTION: COMPLEXES OF PREPTIDE BINDING FRACHENTS OF HEAT-SHOCK
TITLE OF INVENTION: PROTEINS AND THEIR USE AS IMMUNOTHERAPEUTIC AGENTS
FILE REPERENCE: 8449-1135
CURRENT APPLICATION NUMBER: US/09/759,010
CURRENT APPLICATION NUMBER: US/09/759,010
SOFTWARE: Patentin Ver. 2.1
SOFTWARE: Patentin Ver. 2.1
SEQ ID NO 4
LENGTH: 646
TYPE: PRI
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APPLICANT: Glbson, Bradford W.
APPLICANT: Glbson, Bradford W.
APPLICANT: Glbson, Bradford W.
APPLICANT: Glenn, Gary M.
APPLICANT: Glenn, Gary M.
APPLICANT: Warnock, Dale B.
TITLE OF INVENTION: TARGETS FOR THERAPEUTIC INTERVENTION
TITLE OF INVENTION: DEBNIFIED IN THE MITOCHONDRIAL PROTEOME
FILE REFERENCE: 660081.465
CURRENT APPLICATION NUMBER: US/10/408,765A
CURRENT PILING DATE: 2003-04-04
NUMBER OF SEQ ID NOS: 3077
SOFTWARE: FRASESQ for Windows Version 4.0
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       566 ESDKUKILDKCNELLSWLEVNQLAEKDEFDHKRKELEQMCNPIITKLYQG---
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                                                                              Sequence 1753, Application US/10408765A; Publication No. US20040101874A1; GENERAL INFORMATION: APPLICANT: Ghosh, Soumitra S. APPLICANT: Pahy, Boin D.
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US-09-759-010-4
Sequence 4, Application US/09759010
Patent No. US20010034042A1
GENERAL INFORMATION:
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US-10-408-765A-1753
                                                       241 AQGPKGGSG-
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Publication No. US20040063173A1
GENERAL INFORMATION:
GENERAL INFORMATION:
TITLE OF INVENTION: An Hep70 peptide stimulating Natural Killer (NK) cell activity
TITLE OF INVENTION: and uses thereof
TITLE OF INVENTION: and uses thereof
TITLE REFERENCE: E 2022 PCT
CURRENT APPLICATION NUMBER: US/10/380,408A
CURRENT FILING DATE: 2003-08-25
PRIOR APPLICATION NUMBER: EP 00119933.0
PRIOR FILING DATE: 2000-09-13
NUMBER OF SEQ ID NOS: 8
SOFTWARE: Patentin version 3.2
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83.6%; Score 1099; DB 15; Length 641;
Best Local Similarity 81.9%; Pred. No. 2.8e-78;
Matches 217; Conservative 16; Mismatches 16; Indels 16;
                                                                                                                                                                                                                      DB 17; Length, 646;
                                                                                                                                                                                                                                                                        20; Indels
                                                                                                                                                                                                                      Score 1100.5; DB :
Pred. No. 2.2e-78;
                                                                                                                                                                                                    GP--GAQGPKGGSGSGPTIEEVD 258
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PRIOR FILING DATE: 2003-05-06
NUMBER OF SEQ ID NOS: 4
SOPTWARE: PatentIn version 3.2
                                                                                                                         ; TYPE: PRT
; ORGANISM: Rattus norvegicus
US-10-841-207-2
                                                                                                                                                                                                                      Query Match
Best Local Similarity 81.7%
Matches 215; Conservative
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TYPE: PRT
ORGANISM: Homo sapiens
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US-10-380-408A-7
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                                                                                                  LENGTH: 646
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                                                                           SEQ ID NO 2
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Federace 11, Application US/09919039
Publication No. US20030108871A1
GENERAL INFORMATION:
GENERAL INFORMATION:
APPLICANT: Kaser, Matthew R.
TITLE OF INVENTION: GENES
FILE REPERENCE: PA-0035 US
CURRENT APPLICATION NUMBER: US/09/919, 039
CURRENT APPLICATION NUMBER: 600222,113
PRIOR FILING DATE: 2000-07-28
NUMBER OF SEQ ID NOS: 401
SEQ ID NO 11
SEQ ID NO 11
LENGTH: 646
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ORGANISM: Homo sapiens
PEATURE:
NAME/KEY: misc feature
OTHER INFORMATION: Incyte ID No. US20030108871A1 1545176CD1
                                                                                             STRUKEAL INFORMATION.

JAPPLICANT: BYRABALSEN, INGET

APPLICANT: BYRABALSEN, Peter

JAPPLICANT: STEPHEN, John

TITLE OF INVENTION: Biochemical Markers for the Human

TITLE OF INVENTION: Endometrium

TITLE OF INVENTION: Bradometrium

TITLE REPERENCE: 8969-014

CURRENT APPLICATION NUMBER: PCT/GB97/02394

PRIOR APPLICATION NUMBER: PCT/GB97/02394

PRIOR APPLICATION NUMBER: PCT/GB97/0132.8

PRIOR APPLICATION NUMBER: PCT/GB97/0132.8

PRIOR PILING DATE: 1997-04-08

PRIOR FILING DATE: 1996-09-06

NUMBER OF SEQ ID NOS: 16

SOFTWARE: FSESEQ for Windows Version 4.0

SEQ ID NO 16
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Sequence 16, Application US/09935642
Publication No. US20030044795A1
GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                        LENGTH: 646
; TYPE: PRT
; ORGANISM: Homo sapiens
US-09-935-642-16
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US-09-919-039-11
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Patent No. US2002017551A1
GENERAL INFORMATION:
APPLICANT: TERMAN, David S
TITLE OF INVENTION:
COMPOSITION NUMBER: US/09/870,759
CURRENT PAPLICATION NUMBER: US/09/870,759
CURRENT FILING DATE: 2002-01-14
PRIOR APPLICATION NUMBER: US 60/208,128
PRIOR PATILING DATE: 2000-05-30
NUMBER OF SEQ ID NOS: 166
SOFTWARE: Patent In version 3.1
FEMALE: PATENT PATENT NOS: 166
SOFTWARE: PATENT NOS: 166
TEMALE: PATENT NOS: 166
SOFTWARE: PATENT NOS: 166
TEMALE: PATENT NOS: 166
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                                                           ; Score 1097.5; DB 9; Length; Pred. No. 3.7e-78; 24; Mismatches 20; Indels
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83.5%; Score 1097.5; DB 9;
Best Local Similarity 81.4%; Pred. No. 3.7e-78;
Matches 214; Conservative 24; Mismatches 20;
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                                                           83.5%;
81.4%;
                                                                               Best Local Similarity 81.4
Matches 214; Conservative
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TYPE: PRT
ORGANISM: Homo sapiens
ORGANISM: Homo sapiens
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  ; ORGANISM: HC
US-09-759-010-4
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US-10-431-096-147
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TITLE OF INVENTION: COMPOSITIONS AND METHODS FOR TREATMENT OF NEOPLASTIC DISEASE
TITLE OF INVENTION: COMPOSITIONS AND METHODS FOR TREATMENT OF NEOPLASTIC DISEASE
CURRENT APPLICATION NUMBER: US/09/751,708A
CURRENT FILING DATE: 2002-10-15
PRIOR PILING DATE: 1999-12-28
NUMBER: OF SEQ ID NOS: 166
SOFTWARE: Patentin version 3.1
                                                                                                                 384 KSENVQDLLLLDVTPLSLGIETAGGVMTVLIKRNTTIPTKQTQTFTTYSDNQPGVLIQVY 443
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                                                                 Gaps
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                              DB 10; Length 646;
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                                                                 20; Indels
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Best Local Similarity 81.4%; Pred. No. 3.7e-78;
Matches 214; Conservative 24; Mismatches 20; Indels
                              ; Score 1097.5; DB 1; Pred. No. 3.7e-78; 24; Mismatches 20;
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US-09-751-708A-43
Sequence 43, Application US/09751708A
Publication No. US20030157113A1
GENERAL INFORMATION:
                                83.5%;
                                               81.4%;
                             Query Match
Best Local Similarity 81.4*
Matches 214; Conservative
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ORGANISM: Homo sapiens
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US-09-919-039-11
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RESULT

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Sequence 147, Application US/10126103
| Sequence 147, Application US/2030224486A1
| Publication No. US20030224486A1
| GREAT INFORMATION:
| APPLICANT: Bristol-Myers Squibb Company | TILE OF INVENTION: POLYNUCLECTIDES AND POLYPEPTIDES ASSOCIATED WITH THE NF-KB PATHWA | TILE OF INVENTION: POLYNUCLECTIDES AND POLYPEPTIDES ASSOCIATED WITH THE NF-KB PATHWA | TILE OF INVENTION NUMBER: US/10/126,103 | CURRENT FILING DATE: 2002-04-19 | PRIOR PAPLICATION NUMBER: US 60/284,962 | PRIOR PLING DATE: 2001-04-19 | PRIOR PLING DATE: 2001-04-19 | PRIOR APPLICATION NUMBER: US 60/286,645 | PRIOR APPLICATION NUMBER: US 60/346,986 | PRIOR PLING DATE: 2002-01-09 | NUMBER OF SEQ ID NOS: 284 | SOFTWARE: Patentin Version 3.0 | SEQ ID NO 147
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Publication No. US20040086896A1

GENERAL INPORMATION:

APPLICANT: Bristol—Were Squibb Company

TITLE OF INVENTION: PATHWAY

FILE REFERENCE: DOLIOBA CIP

TITLE OF INVENTION: PATHWAY

FILE REPERENCE: DOLIOBA CIP

CURRENT APPLICATION NUMBER: US/10/431,096

CURRENT FILING DATE: 2003-05-07

PRIOR APPLICATION NUMBER: US 60/284,962

PRIOR APPLICATION NUMBER: US 60/284,962

PRIOR APPLICATION NUMBER: US 60/286,645

PRIOR PILING DATE: 2002-04-19

PRIOR PILING DATE: 2002-04-19

PRIOR PILING DATE: 2002-04-19

PRIOR PILING DATE: 2002-04-19

PRIOR PILING DATE: 2002-04-19

PRIOR PILING DATE: 2002-04-19

PRIOR PILING DATE: 2002-04-19

PRIOR PILING DATE: 2002-04-19

PRIOR PILING DATE: 2002-04-19

SPRIOR PILING DATE: 2002-04-19

PRIOR PILING DATE: 2002-01-09

NUMBER OF SEQ ID NOS: 307

SOFTWARE: PatentIn version 3.2

SEQ ID NO 147

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Best Local Similarity 81.4%
Matches 214; Conservative
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US-10-126-103-147
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Sequence 4, Application US/10841207
Publication No. US20050009772A1
GENERAL INFORMATION:
GENERAL INFORMATION:
TITLE OF INVENTION: Retinal Diseases
FILE REPERROCE: A-72263/ThL/MWR (466290-00515)
CURRENT APPLICATION NUMBER: US/10/841,207
CURRENT FILING DATE: 2004-05-06
PRIOR APPLICATION NUMBER: US 60/468,554
PRIOR FILING DATE: 2003-05-06
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                                                                                                                                            Sequence 1, Application US/10737350
Publication No. US20040185511A1
GENERAL INFORMATION:
APPLICANT: GEORGE, ELIAS
TITLE OF INVENTION: HULTIDRUG RESISTANT NEOPLASTIC DISEASE
TITLE OF INVENTION: MULTIDRUG RESISTANT NEOPLASTIC DISEASE
TITLE OF INVENTION NUMBER: US/10/737,350
CURRENT FILING DATE: 2003-12-15
PRIOR PELICATION NUMBER: 60/438,012
PRIOR FILING DATE: 2003-01-03
NUMBER OF SEQ ID NOS: 27
NUMBER OF SEQ ID NOS: 27
NUMBER OF SEQ ID NOS: 27
NUMBER OF SEQ ID NOS: 27
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624 GFPGGAPPSGGASSGPTIEEVD 646
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SOFTWARE: Patentin version 3.2
SEQ ID NO 4
LENGTH: 646
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US-10-841-207-4
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Best Local Similarity
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Best Local Similarity
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TYPE: PRT
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                                                 83.5%; Score 1097.5; DB 15; Length 646; 81.4%; Pred. No. 3.7e-78; ive 24; Mismatches 20; Indels 5;
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APPLICANT: Faby, Boin D.
APPLICANT: Rang, Bing
APPLICANT: Annua, Bing
APPLICANT: Taylor, Steven W.
APPLICANT: Taylor, Steven W.
APPLICANT: Taylor, Steven W.
APPLICANT: Taylor, Steven W.
APPLICANT: Taylor, Dale B.
TITLE OF INVENTION: TARGETS FOR THERAPEUTIC INTERVENTION
FILE OF INVENTION: IDENTIFIED IN THE MITOCHONDRIAL PROTEOME
FILE REFERENCE: 660081465
CURRENT APPLICATION NUMBER: US/10/408,765A
CURRENT FILING DATE: 2002-04-04
NUMBER OF SEQ ID NOS: 3077
SOFTWARE: FRRESCO for Windows Version 4.0
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                                            Query Match
Best Local Similarity 81.4
Matches 214; Conservative
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ORGANISM: Homo sapiens
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US-10-431-096-147
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Matches
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                                                                                  61 EGERAMTKDNNLLGRFELSGIPPAPRGVPQIEVTFDIDANGILNVTATDKSTGKANKITI 120
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 Gaps
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US-10-100-957A-174
 2.
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81.4%; Pred. No. 5.7e-78;
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 20; Indels
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TITLE OF INVENTION: A System for Cell Based Screening
FILE REFERENCE: 97-022-LLA
CURRENT APPLICATION NUMBER: US/10/100,957A
CURRENT FILING DATE: 2002-03-19
NUMBER OF SEQ ID NOS: 180
SOFFWARE: Patentin Ver. 2.0
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24; Mismatches
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; Sequence 4141, Application US/10108260A
; Publication No. US20040005560A1
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ORGANISM: Artificial Sequence
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214; Conservative
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APPLICANT: Kaser, Matthew R.

TITLE OF INVENTION: GENES EXPRESSED IN TREATED HUMAN C3A LIVER CELL CULTURES FILE REPERENCE: PA-0015 US
CURRENT APPLICATION NUMBER: US/09/919,039
CURRENT FILING DATE: 2002-09-09
PRIOR APPLICATION NUMBER: 60/222,113
PRIOR APPLICATION NUMBER: 60/222,113
NUMBER OF SEQ ID NOS: 401
SOFTWARE: PERL PROGRAM
SEQ ID NO 73
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GENERAL INFORMATION:
APPLICANT: HELIX RESEARCH INSTITUTE
TITLE OF INVENTION: NO. US20040005560Alel full length cDNA
FILE REFERENCE: H1-A0106
CURRENT PEPLICATION NUMBER: US/10/108,260A
CURRENT FILING DATE: 2002-03-27
NUMBER OF SEQ ID NOS: 5458
SOFTWARE: PATENT VET: 2.1
SEQ ID NO 4141
LENGTH: 250
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OTHER INFORMATION: Incyte ID No. US20030108871A1 701484CD1
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                                                                                                                                                                                                                                                                                                                                                                                                   83.5%; Score 1097; DB 15;
illarity 100.0%; Pred. No. 1.2e-78;
Conservative 0; Mismatches 0;
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                                                                                                                                                                                                                                                                                                                    ; ORGANISM: Homo sapiens
US-10-108-260A-4141
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Best Local Similarity
Matches 213; Conserv
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                                                                                                  1 KSENVQDLLLLDVAPLSLGLETAGGVMTALIKRNSTIPTKQTQIFTTYSDNQPGVLIQVY
                                                                              1 KSENVQDLLLLDVAPLSLGLETAGGVMTALJKRNSTIPTKQTQIFTTYSDNQPGVLJQVY
    Length 621;
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Publication No. US20040005560A1

GENERAL INFORMATION:

TITLE OF INVENTION: No. US20040005560A1e1 full length cDNA

TITLE OF INVENTION: No. US20040005560A1e1 full length cDNA

TITLE OF INVENTION: No. US20040005560A1e1 full length cDNA

CURRENT PELICATION NUMBER: US/10/108,260A

CURRENT FILING DATE: 2002-03-27

NUMBER OF SEQ ID NOS: 5458

SOFTWARE: Patentin Ver. 2.1

SEQ ID NO 4616

LENGTH: 413
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                                        21; Indels
  DB 15;
82.9%; Score 1089.5; DB
81.0%; Pred. No. 1.5e-77;
ive 24; Mismatches 21
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                    Best Local Similarity 81.0%
Matches 213; Conservative
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US-10-108-260A-4616
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US-10-408-765A-1693
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Publication No. US20040063173A1
GENERAL INFORMATION:
APPLICANT: MULTHOFF, Gabriele
TITLE OF INVENTION: An Hsp70 peptide stimulating Natural Killer (NK) cell activity
TITLE OF INVENTION: and uses thereof
FILE REFERENCE: E 2022 PCT
CURRENT APPLICATION NUMBER: US/10/380,408A
CURRENT FILING DATE: 2003-08-25
PRIOR APPLICATION NUMBER: EP 00119933.0
PRIOR FILING DATE: 2000-09-13
NUMBER OF SEQ ID NOS: 8
SOFTWARE: Patentin version 3.2
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    EADKKKVLDKCQEVISWLDANTLAEKDEFEHKRKELEQVCNPIISGLYQGAGGPGGFG 240
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TITLE OF INVENTION: No. US20040005560A1e1 full length cDNA; FILE REFERENCE: H1-A01.06; CURRENT APPLICATION NUMBER: US/10/108,260A; CURRENT FILING DATE: 2002-03-27; NUMBER OF SEQ ID NOS: 5458; SOFTWARE: Patentin Ver. 2.1; SEQ ID NO 3524
                        20; Indels
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; Pred. No. 1.1e-77;
25; Mismatches 20
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                                                                            241 AQGPKGGSG-----SGPTIEEVD 258
                                                                                                        617 CTGPACGTGYVPGRPATGPTIEEVD 641
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79.8%;
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Best Local Similarity 79.8
Matches 213; Conservative
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ORGANISM: Homo sapiens
US-10-108-260A-3524
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ORGANISM: Bos taurus
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US-10-108-260A-3524
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US-10-380-408A-6
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LENGTH: 650
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204; Conservative
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     1 KSENVQDLLLLDVAPLSLGLETAGGVMTALIKRNSTIPTKQTQIFTTYSDNQPGVLIQVY
              APPLICANT: Zhang, Bing
APPLICANT: Glbson, Bradford W.
APPLICANT: Glbson, Bradford W.
APPLICANT: Taylor, Steven W.
APPLICANT: Taylor, Steven W.
APPLICANT: Glenn, Gary M.
APPLICANT: Glenn, Gary M.
TITLE OF INVENTION: TARGETS FOR THERAPEUTIC INTERVENTION
TITLE OF INVENTION: DENTIFIED IN THE MITOCHONDRIAL PROTEOME
TITLE OF INVENTION NUMBER: US/10/408, 765A
CURRENT FILING DATE: 2003-04-04
NUMBER OF SEQ ID NOS: 3077
SSQ ID NO 1693
LENGTH. 2.0
LENGTH. 2.0
LENGTH. 2.0
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APPLICANT: Zhang, Bing
APPLICANT: Zhang, Bing
APPLICANT: Glann, Gary M.
APPLICANT: Taylor, Steven W.
APPLICANT: Glann, Gary M.
APPLICANT: Warnock, Dale B.
TITLE OF INVENTION: TARGETS FOR THERAPEUTIC INTERVENTION
TITLE OF INVENTION: DENTIFEED IN THE MITOCHONDRIAL PROTEOME
FILE REPERRENCE: 660088 465
CURRENT APPLICATION NUMBER: US/10/408,765A
CURRENT PILING DATE: 2003-04-04
NUMBER OF SEQ ID NOS: 3077
SOFTWARR: FABSEQ for Windows Version 4.0
SEQ ID NO. 723
                                                                                                                                                                                                                                                                                                                                                                                                      Query Match

80.6%; Score 1059.5; DB 16; Length 639;
Best Local Similarity 79.1%; Pred. No. 3.7e-75;
Matches 204; Conservative 24; Mismatches 25; Indels 5;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            80.6%; Score 1059.5; DB 16; Length 639; 79.1%; Pred. No. 3.7e-75;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ; Sequence 1723, Application US/10408765A; Publication No. US20040101874A1; GENERAL INFORMATION:
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                                                                                                                                                                                                                                                                                                                                           CRGANISM: Homo sapiens US-10-408-765A-1693
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Best Local Similarity
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US-10-408-765A-1723
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APPLICANT: Cao, Yongwei
APPLICANT: Cao, Yongwei
APPLICANT: Slater, Steven C.
APPLICANT: Slater, Steven C.
APPLICANT: Slater, Steven C.
APPLICANT: Gldman, Barry S.
APPLICANT: Chen, Xianfeng
TITLE OF INVENTION: EXPRESSION OF MICROBIAL PROTEINS IN PLANTS FOR PRODUCTION OF TITLE OF INVENTION: PLANTS WITH IMPROVED PROPERTIES
FILE REFERENCE: 38-10 [52052)
FURRENT PRILIGATION NUMBER: US/10/369,493
CURRENT FILING DATE: 2003-02-28
PRIOR APPLICATION NUMBER: US 60/360,039
PRIOR FILING DATE: 2002-02-21
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                                                                                                                                                                    507 INDKGRLSKDDIDRAVQEAERYKSEDEANRDRVAAKNALESYTYNIKQTVEDEKLRGKIS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          61 EGERAMTKDNNLLGRFELSGIPPAPRGVPQIEVTFDIDANGILNVTATDKSTGKANKITI
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                                                1 KSENVODLLLLDVAPLSLGLETAGGVMTALIKRNSTIPTKQTQIFTTYSDNQPGVLIQVY
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Indels
25;
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24; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Sequence 6233, Application US/10369493
Publication No. US20030233675A1
GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              , ORGANISM: Caenorhabditis elegans US-10-369-493-6233
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SEQ ID NO 6233
LENGTH: 640
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RESULT 37

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Gaps

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445

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Sequence 204, Application US/08919039
Publication No. US20030108871A1
GENERAL INFORMATION:
APPLICANT: Kaser, Matthew R.
TITLE OF INVENTION: GENES EXPRESSED IN TREATED HUMAN C3A LIVER CELL CULTURES
FILE REPERENCE: PA-0035 US
CURRENT PELLOATION NUMBER: US/09/919,039
CURRENT FILING DATE: 2002-09-09
PRIOR PELLING DATE: 2000-07-28
NUMBER OF SEQ ID NOS: 401
SEQ ID NO 204
ILENGTH: 643
                                                                                                                                                                                                                                                                                                  506 TNDKGRLSKÆEVERMYHEAEQYKAEDEAQRDRVAAKNSLEAHVFHVKGSLQEESLRDKIP 565
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           121 TNDKGRLSKEBIBRMVQEAEKYKAEDEVQRERVSAKNALESYAFNNKSAVEDEGLKGKIS 180
                                                                                                                                                                                  61 EGERAMTKONNILGRFELSGIPPAPRGVPQIEVTFDIDANGILNVTATDKSTGKANKITI 120
                                                                                                                                                                                                         446 EGERAMTKONNLLGRPELSGIPPAPRGVPQIEVTFDIDANGILSVTATDRSTGKANKITI 505
                                                                                                                                                                                                                                                                        121 TNDKGRLSKEEIERMVQEAEKYKAEDEVQRERVSAKNALESYAFNWKSAVEDEGLKGKIS, 180
                                                                                                                                                                                                                                                                                                                                                                 181 EADKKKVLDKCQEVISWLDANTLAEKDEFEHKRKELEQVCNPIISGLYQGAGGPGGGFG 240
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                                                                                           1 KSENVQDLLLLDVAPLSLGLETAGGVMTALIKRNSTIPTKQTQIFTTYSDNQPGVLIQVY
       643;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ; NAME/KEY: misc_feature
; OTHER INFORMATION: Incyte ID No. US20030108871A1 1440032CD1
US-09-919-039-204
  Length
                                              Indels
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Query Match 77.0%; Score 1012; DB 10; Best Local Similarity 74.4%; Pred. No. 2.1e-71; Matches 192; Conservative 33; Mismatches 33;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     77.0%; Score 1012; DB 10;
74.4%; Pred. No. 2.1e-71;
:ive 33; Mismatches 33;
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626 TQARQGDPSTGPIIEEVD 643
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626 TQARQGDPSTGPIIEEVD 643
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Matches 192, Conservative
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US-09-919-039-204
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Publication No. US20030073160A1

GENERAL INFORMATION:

GENERAL INFORMATION:

GENERAL INFORMATION:

APPLICANT: BOUX, Hearther A.

APPLICANT: Wong, Geraldine S.

APPLICANT: Wong, Geraldine S.

APPLICANT: Normanion: ComPOSITIONS AND METHODS FOR DETECTING STRESS-INDUCIBLE PROTEINS

FILE REFERENCE: 12071-006001

CURRENT APPLICATION NUMBER: WO USCO/33341

FRICK APPLICATION NUMBER: WO USCO/33341

PRIOR FILING DATE: 1999-12-07

PRIOR FILING DATE: 1999-12-07

NUMBER OF SEQ ID NOS: 15

SOFTWARE: FRSESEQ FOR Windows Version 4.0
                                                               APPLICANT: Broadus, Julie
APPLICANT: Stam, Lynn
APPLICANT: Stam, Lynn
APPLICANT: Stam, Lynn
APPLICANT: Stam, Lynn
APPLICANT: Stam, Lynn
APPLICANT: Stam, Lynn
APPLICANT: Mandar, Kim
TITLE OF INVENTION: NUCLEIC ACID SEQUENCES FROM DROSOPHILA MELANOGASTER THAT ENCODE
TITLE OF INVENTION: PROTEINS ESSENTIAL FOR LARVAL VIABILITY AND USES THEREOF
TITLE OF INVENTION: PROTEINS ESSENTIAL FOR LARVAL VIABILITY AND USES THEREOF
CURRENT APPLICATION NUMBER: US/10/108,605
CURRENT APPLICATION NUMBER: US 60/761,142
PRIOR APPLICATION NUMBER: US 60/176,1418
PRIOR APPLICATION NUMBER: US 60/176,418
PRIOR PILING DATE: 2000-01-14
NUMBER OF SEQ ID NOS: 361
SOFTWARE: PATENTIN VET. 2.1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      443
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       Sequence 75, Application US/10108605
Publication No. US20020160934A1
GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                          TYPE: PRT ORGANISM: Drosophila melanogaster
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ORGANISM: Homo sapiens
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LENGTH: 643
                                                                                                                                                                                                                                                                                                                                                                                                                   SEQ ID NO 75
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; NAME/KEY: SITE
; LOCATION: (298)
; OTHER INFORMATION: Xea equals any of the naturally occurring L-amino acids
US-09-925-302-724
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ; OTHER INFORMATION: Xaa equals any of the naturally occurring L-amino acids US-09-925-302-724
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               TNDKGRLSKERIERMVQEAEKYKAEDEVQRERVSAKNALESYAFNMKSAVEDEGLKGKIS 180
                                                                                                                                                                                                                                                                      61 EGERAMIKDNNLLGRFELSGIPPAPRGVPQIEVTFDIDANGILMVTATDKSTGKANKITI 120
                                                                                                                                                                                                                                                                                                                                                                                                                                                               LOCATION: (216)
OTHER INFORMATION: Xaa equals any of the naturally occurring L-amino acids
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                                                                                                                                                                                                                                                                                            1 KSENVQDLLLLDVAPLSLGLETAGGVMTALIKRNSTIPTKQTQIPTTYSDNQPGVLIQVY
                                                                                                                                                                                                            181 EADKKKVLDKCOEVISWLDANTLAEKDEPEHKRKELEQVCNPIISGLYQGAGGPGGFG
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                                                                                                   77.0%; Score 1012; DB 9; Length 665; 74.4%; Pred. No. 2.2e-71;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Indels
                                                                                                                                               Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           and Antibodies
                                                                                                      Query Match 77.0%; Score 1012; DB 9; 1
Best Local Similarity 74.4%; Pred. No. 2.2e-71;
Matches 192; Conservative 33; Mismatches 33;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Query Match 77.0%; Score 1012; DB 10; Best Local Similarity 74.4%; Pred. No. 2.2e-71; Matches 192; Conservative 33; Mismatches 33;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 TITLE OF INVENTION: Nucleic Acids, Proteins and TITLE OF INVENTION: Nucleic Acids, Proteins and FILE REPERBRUE: PA104
CURRENT APPLICATION NUMBER: US/09/925,302
CURRENT PILING DATE: 2001-08-10
PRIOR APPLICATION NUMBER: PCT/US00/05918
PRIOR APPLICATION NUMBER: 60/124,270
PRIOR APPLICATION NUMBER: 60/124,270
PRIOR APPLICATION NUMBER: 60/124,270
SPINGR APPLICATION NUMBER: 60/124,270
SPINGR APPLICATION NUMBER: 60/124,270
SOFTWARE: PatentIn Ver: 2.0
SEQ ID NO 724
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Sequence 724, Application US/09925302
Publication No. US20030064072A9
GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              241 AQGPKGGSGSGPTIBEVD 258
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ORGANISM: Homo sapiens
FEATURE:
NAME/KEY: SITE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          NAME/KEY: SITE
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                                                    Sequence 396, Application US/10755889

Publication No. US20040171823A1

GENERAL INFORMATION:
APPLICANT: Bristol-Myers Squibb Company

TITLE OF INVENTION: POLYNUCLEOTIDES AND POLYPEPTIDES ASSOCIATED WITH THE NF-kB

TITLE OF INVENTION: PATHWAY

FILE REFREENCE: D0284 NP

CURRENT APPLICATION NUMBER: US, 10,755,889

CURRENT PILING DATE: 2004-01-13

PRIOR PRLING DATE: 2003-01-14

PRIOR PLING DATE: 2003-05-12

NUMBER OF SEQ ID NOS: 823

SOFTWARE: Patentin Version 3.2

SEQ ID NO 396
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LOCATION: (216)
OTHER INFORMATION: Xaa equals any of the naturally occurring L-amino acids
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Patent No. US20020044941A1

GENERAL INFORMATION:

TITLE OF INVENTION: Nucleic Acids, Proteins and Antibodies

FILE REFERENCE: PA104

CURRENT APPLICATION NUMBER: US/09/925,302

CURRENT PILING DATE: 2001-08-10

PRIOR APPLICATION NUMBER: PCT/US00/05918

PRIOR FILING DATE: 1999-03-12

NUMBER: OF SEQ ID NOS: 896
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                241 AQGPKGGSGSGPTIEEVD 258
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Matches 192; Conservative
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                                                                                                                                                                                                                                                                                                                                                                                                                        TYPE: PRT
ORGANISM: Homo sapiens
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ORGANISM: Homo sapiens
                       RESULT 40
US-10-755-889-396
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US-09-925-302-724
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SEQ ID NO 724
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Sequence 203543, Application US/10437963
; Publication No. US20040123343A1
; GENERAL INFORMATION:
    APPLICANT: La ROSa, Thomas J.
    APPLICANT: APPLICANT: APPLICANT: APPLICANT: APPLICANT: APPLICANT: APPLICANT: Boukharov, Andrey A.
    APPLICANT: Boukharov, Andrey A.
    APPLICANT: Boukharov, Andrey A.
    APPLICANT: Boukharov, Andrey A.
    APPLICANT: Boukharov, Andrey A.
    APPLICANT: Broad, Brad
    APPLICANT: Brad
    APPLICANT: Brad
    APPLICANT: A. Ping
    TITLE OF INVENTION: Rice Nucleic Acid Molecules and Other Molecules Associated With
    TITLE OF INVENTION: Plants and Uses Thereof for Plant Improvement
    TITLE OF INVENTION: NUMBER: US/10/437,963
    CURRENT FILING DATE: 2003-05-14
    NUMBER OF SEQ ID NOS: 204966
                                                                                                                                                                                                                                                                                                                                                                                                                                                                           392 NQRVQDLILLDVTPLSLGLETAGGWTVLIPRNTTIPTKKEQVPSTYSDNQPGVLIQVYE 451
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              452 GERTRIXDNNLLGKFELIGIPPAPRGVPQINVIFDIDANGILNVSAEDKITGKKXNKIIIT 511
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       122 NDKGRLSKEEIERMVQEAEKYKAEDEVQRERVSAKNALESYAFNMKSAVEDEGLKGKISE 181
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     TITLE OF INVENTION: Plants and Uses Thereof for Plant Improvement
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                                                                                                                                                                                                                                                                                                                                       Query Match 73.3%; Score 963.5; DB 16; Length Best Local Similarity 71.9%; Pred. No. 1.5e-67; Matches 189; Conservative 25; Mismatches 42; Indels
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US-10-437-963-203543
                                                                                                                                                                                                                                                               ; OTHER INFORMATION: Clone ID: PAT_MRT4530_8342C.1.pep
US-10-437-963-186650
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                     FILE REFERENCE: 38-21(53221)B
CURRENT APPLICATION NUMBER: US/10/437,963
CURRENT FILING DATE: 2003-05-14
NUMBER OF SEQ ID NOS: 204966
SEQ ID NO 186650
LENGTH: 653
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                                                                                                                                                                                                         ORGANISM: Oryza sativa
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ORGANISM: Oryza sativa
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LENGTH: 646
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                                                                                                                                                                                                                                                                                                          Sequence 234224, Application US/10424599
; Sequence 234224, Application US/10424599
; Publication No. US20040031072A1
; GENERAL INFORMATION:
; APPLICANT: La Rosa Thomas J
; APPLICANT: Cao Yongwei
; APPLICANT: Cao Yongwei
; TITLE OF INVENTION: Soy Nucleic Acid Molecules and Other Molecules Associated With
; TITLE OF INVENTION: Plants and Uses Thereof for Plant Improvement
; TITLE OF INVENTION: Plants and Uses Thereof for Plant Improvement
; FILE SERERENCE: 38-21(3523)8
; CURRENT FILING DATE: 2003-04-28
; NUMBER OF SEQ ID NOS: 285684
; SEQ ID NO 234323
: LENGTH: 655
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APPLICANT: Li, Ping
TITLE OF INVENTION: Rice Nucleic Acid Molecules and Other Molecules Associated With
                                                528 TNDKGRLSKEEVERWVHEAEQYKAEDEAQRDRVAAKNSLEAHVFHVKGSLQEESLRDKIP 587
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                122 NDKGRLSKEEIERMVQEAEKYKAEDEVQRERVSAKNALESYAPNMKSAVEDEGLKGKISE 181
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   OTHER INFORMATION: Clone ID: PAT_MRT3847_53620C.1.pep
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       242 QG-----PKGGSGSGPTIEEVD 258
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APPLICANT: Kovalic, David K.
APPLICANT: Zhou, Yihua
APPLICANT: Cao, Yongwei
APPLICANT: Wu, Wei
APPLICANT: Buukharov, Andrey A.
APPLICANT: Barbazuk, Brad
                                                                                                                                                      241 AQGPKGGSGSGPTIEEVD 258
                                                                                                                                                                                                    648 TQARQGDPSTGPIIEEVD 665
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US-10-437-963-186650
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Page 17

APPLICANT: Kovalic David K

APPLICANT: Zhou Yihua

APPLICANT: Cao Yongwei

TITLE OF INVENTION: SON Nucleic Acid Molecules and Other Molecules Associated With
TITLE OF INVENTION: DAIRS and Uses Thereof for Plant Improvement
FILE REFERENCE: 38-21(5323)B

CURRENT APPLICATION UNBER: US/10/424,599

CURRENT FILING DAIE: 2003-04-28

NUMBER OF SEQ ID NOS: 285684

LEMOTH: 648

TYPE: ...
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Publication No. US20040172684A1
GENERAL INFORMATION:
GENERAL INFORMATION:
APPLICANT: Kovalic, David K.
APPLICANT: Zhou, Yihua
APPLICANT: Cao, Yongwei
TITLE OF INVENTION: Plants and Uses Thereof For Plant Improvement
FILE REFERENCE: 38-21(53535) B
CURRENT APPLICATION NUMBER: US/10/767,701
CURRENT FILING DATE: 2004-01-29
NUMBER OF SEQ ID NOS: 63128
SEQ ID NO 46962
LENGTH: 649
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US-10-767-701-46962
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ; OTHER INFORMATION: Clone ID: PAT_MRT3847_112404C.1.pep
US-10-424-599-156571
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ORGANISM: Glycine max
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APPLICANT: Liu, Jingdong
APPLICANT: Screen, Yihua
APPLICANT: Screen, Steven E
APPLICANT: Cao, Yongwi
APPLICANT: Cao, Yongwi
TITLE OF INVENTION: Nucleic Acid Molecules and Other Molecules Associated With
TITLE OF INVENTION: Plants and Uses Thereof for Plant Improvement
FILE REFERENCE: 38-21 (53313) B
CURRENT APPLICATION NUMBER: US/10/425,114
CURRENT PILING DATE: 2003-04-28
NUMBER OF SEQ ID NOS: 73128
                                                                                                                                                                                                                                                                      570 DDKKRIEDAIDGAISWLDTNQLAEADEFEDKMKELEGICNPIIAKMYQGPGADMAGGMDE 629
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ; OTHER INFORMATION: Clone ID: 700567610 FLI.pep
US-10-425-114-43012
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; Sequence 156571, Application US/10424599
; Publication No. US20040031072A1
; GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ; Sequence 43012, Application US/10425114; Publication No. US20040034888A1
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          TYPE: PRT
ORGANISM: Glycine max
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**APPLICANT: Screen, Steven E

APPLICANT: Tabaska, Jack E

APPLICANT: Tabaska, Jack E

TITLE OF INVENTION: Nucleic Acid Molecules and Other Molecules Associated With

TITLE OF INVENTION: Nucleic Acid Molecules and Other Molecules Associated With

TITLE OF INVENTION: Plants and Uses Thereof for Plant Improvement

FILE REFERENT S121533131B

CURRENT APPLICATION NUMBER: US/10/425,114

CURRENT FILING DATE: 2003-04-28

NUMBER OF SEQ ID NOS: 73128

SEQ ID NO 43851

TYPE: ...
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US-10-424-599-156568
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APPLICANT: Zhou, Yihua
APPLICANT: Screen, Steven E
APPLICANT: Screen, Steven E
APPLICANT: Tabaska, Jack E
APPLICANT: Tabaska, Jack E
APPLICANT: Cao, Yongwei
TITLE OF INVENTION: Nucleic Acid Molecules and Other Molecules Associated With
TITLE OF INVENTION: Plants and Uses Thereof for Plant Improvement
FILE REFERENCE: 38-21(53313)8
CURRENT APPLICATION NUMBER: US/10/425,114
CURRENT APPLICATION NUMBER: 2003-04-28
NUMBER OF SEQ ID NOS: 73128
SEQ ID NO 62894
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                                                                                                                                                                                                                                                             ADKKKVLDKCQEVISWLDANTLAEKDEFEHKRKELEQVCNPIISGLYQGAGGPGPGFGA 241
                                                                                                                GERARTKDNNLLGKFELSGIPPAPRGVPQITVCFDMDANGILNVSAEDKTTGQKNKITIT
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ; OTHER INFORMATION: Clone ID: LIB143-053-G1_FLI.pep
US-10-425-114-62894
                                                                                                                                                                                                                                                                                                                                                                                                                                                            US-10-425-114-62894
; Sequence 62894, Application US/10425114
; Publication No. US20040034888A1
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631 QDAPPAGGSGAGPKIEEVD 649
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APPLICANT: La Rosa Thomas J
APPLICANT: La Rosa Thomas J
APPLICANT: La Rosa Thomas J
APPLICANT: Avalic David K
APPLICANT: Abula
APPLICANT: Abula
APPLICANT: Cao Yongwei
TITLE OF INVENTION: Soy Nucleic Acid Molecules and Other Molecules Associated With
TITLE OF INVENTION: Plants and Uses Thereof for Plant Improvement
FILE REFERENCE: 38-21(53223) B
CURRENT APPLICATION NUMBER: US/10/424,599
CURRENT FILING DATE: 2003-04-28
NUMBER OF SEQ ID NOS: 285684
LENGTH: 323
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US-10-424-599-156568
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                                                                       72.6%; Score 954; DB 15; 70.7%; Pred. No. 2.8e-67; iive 30; Mismatches 44;
OTHER INFORMATION: Clone ID: 700567825 FLI.pep
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OTHER INFORMATION: unsure at all Xaa locations
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Matches 183; Conservative
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US-10-425-114-43851
; Sequence 43851, Application US/10425114
; Publication No. US20040034888A1
; GENERAL INFORMATION:
; APPLICANT: Liu, Jingdong
; APPLICANT: Zhou, Yihua

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GENERAL INFORMATION:

GENERAL INFORMATION:

APPLICANT: Liu, Jingdong

APPLICANT: Tou, Vihua

APPLICANT: Screen, Steven E

APPLICANT: Screen, Steven E

APPLICANT: Screen, Steven E

APPLICANT: Tabaska, Jack E

APPLICANT: Palaska, Jack E

APPLICANT: Plants and Uses Thereof for Plant Improvement

FILE OF INVENTION: Plants and Uses Thereof for Plant Improvement

FILE REFERENCE: 38-21(531318)

CURRENT FILING DATE: 2003-04-28

NUMBER OF SEQ ID NOS: 73128

SEQ ID NO 43825

LENGTH: 651
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APPLICANT: Liu, Jingdong
APPLICANT: Zhou, Yihua
APPLICANT: Sovalic, David K.
APPLICANT: Screen, Steven E
APPLICANT: Tabaska, Jack B
APPLICANT: Tabaska, Jack B
APPLICANT: Tabaska, Jack B
APPLICANT: Tabaska, Jack B
APPLICANT: Tabaska, Jack B
APPLICANT: Tabaska, Jack B
APPLICANT: Tabaska, Jack B
APPLICANT: Tabaska, Jack B
APPLICANT: Sover Service Acid Molecules and Other Molecules Associated With
TITLE OF INVENTION: Nucleic Acid Molecules and Other Molecules Associated With
TITLE OF INVENTION: Plants and Uses Thereof for Plant Improvement
TITLE OF INVENTION: Number: US/10/425,114
CURRENT APPLICATION NUMBER: US/10/425,114
CURRENT FILING DATE: 2003-04-28
NUMBER OF SEQ ID NOS: 73128
SEQ ID NO 55946
LENGTH: 651
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72.6%; Score 954; DB 15;
Best Local Similarity 70.7%; Pred. No. 8.4e-67;
Matches 183; Conservative 30; Mismatches 44;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ; OTHER INFORMATION: Clone ID: 700661328_FLI.pep
US-10-425-114-43825
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US-10-425-114-55946
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Publication No. US20040034888A1
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Sequence 156512, Application US/10424599

Publication No. US20040031072A1

GENERAL INFORMATION:

APPLICANT: La Rosa Thomas J

APPLICANT: Louiville David K

APPLICANT: Cao Yongwei

TITLE OF INVENTION: Soy Nucleic Acid Molecules and Other Molecules Associated With

TITLE OF INVENTION: Plants and Uses Thereof for Plant Improvement

TITLE OF INVENTION: 18-21(53223)

CURRENT APPLICATION NUMBER: US/10/424,599

CURRENT PILING DATE: 2003-04-28

SEQ ID NO 156572

LENGTH: 649
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US-10-424-599-156572
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US-10-424-599-156572
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US-10-425-114-43825
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Publication No. US20040031072A1
GENERAL INFORMATION:
APPLICANT: La Rosa Thomas J
APPLICANT: La Rosa Thomas J
APPLICANT: Cao Yongwei
APPLICANT: Cao Yongwei
TITLE OF INVENTION: Soy Nucleic Acid Molecules and Other Molecules Associated With
TITLE OF INVENTION: Plants and Uses Thereof for Plant Improvement
FILE REFRENCE: 38-21(53223)B
CURRENT APPLICATION NUMBER: US/10/424,599
CURRENT FILING DATE: 2003-04-28
NUMBER OF SEQ ID NOS: 285684
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                                                                          NDKGRLSKEEIERMVQEAEKYKAEDEVQRERVSAKNALESYAFNMKSAVEDEGLKGKISE 181
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                                                    2 SENVODLILLDVAPLSLGLETAGGVMTALIKRNSTIPTKQTQIFTTYSDNQPGVLIQVYE
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                    44; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ; OTHER INFORMATION: Clone ID: PAT_MRT3847_18846C.1.pep. US-10-424-599-195814
70.7%; Pred. No. 8.4e-67; ive 30; Mismatches 44
                                                                                                                                                                                                                                                                                                                                            242 QGPKGGSGS--GPTIEEVD 258
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Matches 183; Conservative
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Best Local Similarity
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RESULT 56

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APPLICANT: La Rosa Thomas J
APPLICANT: La Rosa Thomas J
APPLICANT: Kovalic David K
APPLICANT: Should R
APPLICANT: Can Vinua
APPLICANT: Can Yinua
APPLICANT: Can Yongwei
TITLE OF INVENTION: Plante and Uses Thereof for Plant Improvement
FILE REPERENCE: 38-21 (53223) B
CURRENT APPLICATION NUMBER: US/10/424,599
CURRENT APPLICATION DATE: 2003-04-28
NUMBER OF SEQ ID NOS: 285684
SEQ ID NO 197829
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                                                                                                                                                                                                                                                                                                                                                                                                                 Query Match 72.5%; Score 952; DB 15; Best Local Similarity 71.4%; Pred. No. 1.2e-66; Matches 185; Conservative 30; Mismatches 42;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Sequence 102982, Application US/10437963; Publication No. US20040123343A1
GENERAL INFORMATION: GENERAL INFORMATION: APPLICANT: La Rosa, Thomas J. APPLICANT: Kovalic, David K. APPLICANT: Zhou, Yihua APPLICANT: Cao, Yongwei APPLICANT: Wu, Wei APPLICANT: Boukharov, Andrey A.
Sequence 197829, Application US/10424599 Publication No. US20040031072A1 GENERAL INFORMATION:
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ORGANISM: Oryza sativa
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NAME/KEY: unsure
LOCATION: (1)..(648)
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US-10-437-963-102982
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584 EDKKKIEDAVDGAISWLDSNQLAEVEFFEDKMKELEGICNPIIAKMYQGEGAGMGAAAGM 643
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US-10-259-165-98
; Sequence 98, Application US/10259165
; Publication No. US20030135888A1
; GENERAL INFORMATION:
; APPLICANT: Zhu, Tong
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644 DEDAPSGGSGAGPKIEEVD 662
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Goff, Stephen A.
Katagiri, Fumiyaki
Kreps, Joel
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Chang, Hur-song
Briggs, Steven P.
Cooper, Bret
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Provart, Nicholas
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APPLICANT:
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APPLICANT: Liu, Jingdong
APPLICANT: Zhou, Yihua
APPLICANT: Kowalic, David K.
APPLICANT: Screen, Steven B
APPLICANT: Tabaska, Jack E
APPLICANT: Tabaska, Jack E
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APPLICANT: Tabaska, Jack E
APPLICANT: No. 1906 No. 1910/425, 114
CURRENT PILING DATE: 2003-04-28
NUMBER OF SEQ ID NOS: 73128
SEQ ID NO 62493
LENGTH: 662
                                                                                                                                                                                     390 NEKVQDLLLLDVTPLSLGLETAGGVMTVLIPRNTTIPTKKEQVFSTYSDNQPGVLIQVYE 449
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                                                                                       Query Match 72.4%; Score 951; DB 16; Length 6 Best Local Similarity 71.0%; Pred. No. 1.4e-66; Matches 184; Conservative 29; Mismatches 44; Indels
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               PEATURE:

OTHER INFORMATION: Clone ID: PAT_MRT4530_100455C.1.pep
US-10-437-963-102982
OTHER INFORMATION: ungure at all Xaa locations
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US-10-425-114-62493
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ; Sequence 62493, Application US/10425114; Publication No. US20040034888A1; GENERAL INFORMATION:
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ORGANISM: Zea mays
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US-10-425-114-62493
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APPLICANT: Lau, Jingdong
APPLICANT: Blour, Yihua
APPLICANT: Kovalic, David K.
APPLICANT: Screen, Steven E
APPLICANT: Habsaka, Jack E
APPLICANT: Cao, Yongwei
TITLE OF INVENTION: Nacleic Acid Molecules and Other Molecules Associated With
TITLE OF INVENTION: Plants and Uses Thereof for Plant Improvement
FILE REFERENCE: 38-21(53313)8
CURRENT APPLICATION NUMBER: US/10/425,114
CURRENT FILING DATE: 2003-04-28
NUMBER OF SEQ ID NOS: 73128
SEQ ID NO 62884
LENGTH: 662
TYPE. F.
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US-10-425-114-62884
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APPLICANT: Light And APPLICANT: Light APPLICANT: Cooper, Bret
APPLICANT: Cooper, Bret
APPLICANT: Glazebrook, Jane
APPLICANT: Glazebrook, Jane
APPLICANT: Glazebrook, Jane
APPLICANT: Katagiri, Funiyaki
APPLICANT: Katagiri, Funiyaki
APPLICANT: Katagiri, Funiyaki
APPLICANT: Ricke, Darrell
APPLICANT: Ricke, Darrell
APPLICANT: Ricke, Darrell
TILLE OF INVENTION: GENES THAT ARE MODULATED BY POSTTRANSCRIPTIONAL GENE SILENCING
FILE REFERENCE: 7003-0-NP
CURRENT APPLICATION NUMBER: US/10/259,165
CURRENT APPLICATION NUMBER: US 60/370,620
FRIOR PELING DATE: 2002-04-04
FRIOR PELING DATE: 2002-03-27
FRIOR APPLICATION NUMBER: US 60/325,277
FRIOR APPLICATION NUMBER: US 60/325,277
FRIOR APPLICATION NUMBER: US 60/325,277
FRIOR APPLICATION NUMBER: US 60/325,277
FRIOR APPLICATION DOS: 782
SOFTWARR: PatentList.pl version 3.0.4 (C) 2001 Syngenta
SEQ ID NO 214
LENGTH AND
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                                                                                                                                                                                                                                                                                              259 ADKKKIEDAIDQAIQWIDGNQIAEADEFDDKMKELEGICNPIIAKMYQCAGADMAGGMDE 318
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                                                                                                                                                       Length 337;
                                                                                                                                                       Query Match 72.0%; Score 946; DB 14; Length 3
Best Local Similarity 70.3%; Pred. No. 1.5e-66;
Matches 182; Conservative 31; Mismatches 44; Indels
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Publication No. US20030135888A1
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Chang, Hur-song
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Best Local Similarity 70.34
Matches 182; Conservative
                        ; LENGTH: 337
; TYPE: PRT
; ORGANISM: Oryza sativa
US-10-259-165-426
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US-10-259-165-214
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SEQ ID NO 426
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APPLICANT: Goper, Bret
APPLICANT: Goper, Bret
APPLICANT: Goper, Bret
APPLICANT: Goper, Bret
APPLICANT: Goff, Stephen A.
APPLICANT: Katagiri, Fumiyaki
APPLICANT: Katagiri, Fumiyaki
APPLICANT: Katagiri, Fumiyaki
APPLICANT: Katagiri, Fumiyaki
APPLICANT: Katagiri, Fumiyaki
APPLICANT: Ricke, Darrael
APPLICANT: Brovart, Nicholas
APPLICANT: Ricke, Darrael
APPLICANT: Ricke, Darrael
APPLICANT: REFERENCE: 70030-NP
FILE REFERENCE: 70030-NP
FILE REFERENCE: 70030-NP
FILE REFERENCE: 2002-09-26
FRIOR APPLICATION NUMBER: US 60/370,620
FRIOR APPLICATION NUMBER: US 60/368,327
FRIOR APPLICATION NUMBER: US 60/368,327
FRIOR APPLICATION NUMBER: US 60/325,277
FRIOR FILING DATE: 2001-09-26
NUMBER OF SEQ 1D NOS: 782
NUMBER OF SEQ 1D NOS: 782
                     TITLE OF INVENTION: GENES THAT ARE MODULATED BY POSTTRANSCRIPTIONAL GENE SILENCING
FILE REFERENCE: 70030-NP
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             182 ADKKKVLDKCQEVISWLDANTLAEKDEFEHKRKELEQVCNPIISGLYQGAGGPGGFGA 241
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1.5e-66;
                                                        CURRENT APPLICATION NUMBER: US/10/259,165
CURRENT FILING DATE: 2002-09-26
PRIOR FILING DATE: 2002-09-26
PRIOR FILING DATE: 2002-04-04
PRIOR FILING DATE: 2002-04-04
PRIOR FILING DATE: 2002-04-07
PRIOR PRIOR FILING DATE: 2002-09-27
PRIOR PRIOR FILING DATE: 2001-09-26
NUMBER OF SEQ ID NOS: 782
SOFTWARE: PatentList.pl version 3.0.4 (C) 2001 Syngenta
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Query Match 72.0%; Score 946; DB 1
Best Local Similarity 70.3%; Pred. No. 1.5e-6
Matches 182; Conservative 31; Mismatches
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Publication No. US20030135888A1
GENERAL INFORMATION:
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Chang, Hur-song
Ricke, Darrell
                                                                                                                                                                                                                                                                                                                                                                                       TYPE: PRT
ORGANISM: Oryza sativa
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Sequence 47021, Application US/10767701
Sequence 47021, Application US/10767701
Sequence 47021, Application US/20040172684A1
Sequence 47021, Application No. US20040172684A1
GENERAL INFORATION.
APPLICANT: Cano., Yihua
APPLICANT: Cano., Yihua
APPLICANT: Cano., Yongwid
TITLE OF INVENTION: Nucleic Acid Molecules and Other Molecules Associated With
TITLE OF INVENTION: Plants and Uses Thereof For Plant Improvement
FILE REFERENCE: 38-21(53335)B
CURRENT APPLICATION NUMBER: US/10/767,701
CURRENT PELLING DATE: 2004-01-29
NUMBER OF SEQ. ID NOS: 63128
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US-10-437-963-196148
                                                                                                                                                                                                                      ; Sequence 196148, Application US/10437963; Publication No. US20040123343A1; GENERAL INFORMATION:
242 QG--PKGGSGSGPTIEEVD 258
                                    631 DDAPPAGGSGAGPKIEEVD 649
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LENGTH: 486
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APPLICANT: Moughamer, Todd
APPLICANT: Provart, Nicholas
APPLICANT: Provart, Nicholas
APPLICANT: Provart, Nicholas
APPLICANT: Provart, Nicholas
APPLICANT: Picker, Darrell
FILE REPERENCE: 70030-NP
FILE REPERENCE: 70030-NP
CURRENT APPLICATION NUMBER: US/10/259,165
PRIOR PILING DATE: 2002-09-26
PRIOR PLING DATE: 2002-09-30
PRIOR FILING DATE: 2002-03-27
PRIOR PLING DATE: 2002-03-27
PRIOR PLING DATE: 2001-09-26
PRIOR FILING DATE: 2001-09-26
NUMBER OF SEQ ID NOS: 782
SOFTWARE: PatentList.pl version 3.0.4 (C) 2001 Syngenta
                                                            391 NEKVQDLLLLDVTPLSLGLETAGGVMTVLIPRNTTIPTKKEQVPSTYSDNQPGVLIQVYE 450
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               451 GERTRITRDNNILGKKFELSGIPPAPRGVPQITVCFDIDANGILNVSAEDKTTGQKNKITIT 510
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                                 GERAMTKONNLLGRFELSGIPPAPRGVPQIEVTFDIDANGILNVTATDKSTGKANKITIT
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70.3%; Pred. No. 3.6e-66;
iive 31; Mismatches 44
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Chang, Hur-song
Briggs, Steven P.
Cooper, Bret
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Goff, Stephen A.
Katagiri, Fumiyaki
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Matches 182, Conservative
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LENGTH: 649
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APPLICANT: Li, Ping
TITLE OF INVENTION: Rice Nucleic Acid Molecules and Other Molecules Associated With
TITLE OF INVENTION: Plants and Uses Thereof for Plant Improvement
FILE REFERENCE: 38-21(5321)B
CURRENT APPLICATION NUMBER: US/10/437,963
                                                                                                                                                                                                                                                     APPLICANT: Zhou, Yihua
APPLICANT: Zhou, Yihua
APPLICANT: Kovalic, David K.
APPLICANT: Screen, Steven E
APPLICANT: Cachen, Steven E
APPLICANTION: Plants and Uses Thereof for Plant Improvement
FILE REFERENCE: 38-21(53313) B
CURRENT FILING DATE: 2003-04-28
NUMBER OF SEQ ID NOS: 73128
SEQ ID NO 45699
LENGTH: 282
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             127 LSKEEIERWVQEAEKYKAEDEVQRERVSAKNALESYAFNWKSAVEDEGLKGKISEADKKK 186
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    149 LSKEEIEKWVQEAEKYKAEDEEHKKKVEAKNTLENYAYNMRNTIKDDKIASKLSADDKKK 208
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            187 VLDKCQEVISWLDANTLAEKDEFEHKRKELEQVCNPIISGIYQGAGGPGGFGAQGPKG 246
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                67 TKDNNLLGRFELSGIPPAPRGVPQIEVTFDIDANGILNVTATDKSTGKANKITITNDKGR 126
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         71.7%; Score 942; DB 15; 71.3%; Pred. No. 2.5e-66; iive 28; Mismatches 43;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ), OTHER INFORMATION: Clone ID: 700839890_FLI.pep
US-10-425-114-45699
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Sequence 106268, Application US/10437963;
Publication No. US20040123343A1
GENERAL INFORMATION:
APPLICANT: La Rosa, Thomas J.
APPLICANT: Ehou, Yihua
APPLICANT: Cao, Yongwei
APPLICANT: Wu, Wei
APPLICANT: Wu, Wei
                                                                                                                                                                Sequence 45699, Application US/10425114
Publication No. US20040034888A1
GENERAL INFORMATION:
APPLICANT: Liu, Jingdong
    247 GSGS--GPTIEEVD 258
                                                269 GSGSGAGPKIEĖVD 282
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Best Local Similarity 71.3
Matches 181; Conservative
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ORGANISM: Glycine max
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US-10-437-963-106268
                                                                                                                       RESULT 67
US-10-425-114-45699
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APPLICANT:
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; Sequence 156.70, Application US/10424599
; Publication No. US20040031072A1
; GENERAL INFORMATION:
    APPLICANT: La Rosa Thomas J
    APPLICANT: La Rosa Thomas J
    APPLICANT: Cao Vongwei
    TITLE OF INVENTION: Soy Nucleic Acid Molecules and Other Molecules Associated With
    TITLE OF INVENTION: Plants and Uses Thereof for Plant Improvement
    TITLE OF INVENTION: Plants and Uses Thereof for Plant Improvement
    FILLE REFREENCE: 38-21 (5323.3) B
    CURRENT APPLICATION WHERE: US/10/424,599
    CURRENT FILING DATE: 2003-04-28
    NUMBER OF SEQ ID NOS: 285684
    SEQ ID NO 156570

                                                                                                                                                                                                                                         408 DDKKKIEDAIDAAISWLDANQLAEADEFEDKWKELESLCNPIIAKWYQGAGADMGGAGGM 467
                                                                                                                                                                                                                                                                                                      62 GERAMTKDNNLLGRFELSGIPPAPRGVPQIEVTFDIDANGILNVTATDKSTGKANKITIT 121
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                                                                                                                  Length 486;
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                                                                                                               71.8%; Score 944; DB 16; Length 4 70.3%; Pred. No. 3.5e-66; ive 30; Mismatches 45; Indels
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                                           ; OTHER INFORMATION: Clone ID: SORBI-28MAY03-C49_355.pep
US-10-767-701-47021
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ; OTHER INFORMATION: Clone ID: PAT_MRT3847_112403C.1.pep
US-10-424-599-156570
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                                                                                                             Query Match
71.8%
Best Local Similarity 70.3%
Matches 182; Conservative
ORGANISM: Sorghum bicolor
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ORGANISM: Glycine max
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                        FEATURE:
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APPLICANT: Zhou, Yihua
APPLICANT: Zhou, Yihua
APPLICANT: Kovalic, David K.
APPLICANT: Screen, Steven E
APPLICANT: Screen, Steven E
APPLICANT: Gao, Yongwei
TITLE OF INVENTION: Nucleic Acid Molecules and Other Molecules Associated With
TITLE OF INVENTION: Plants and Uses Thereof for Plant Improvement
FILE REPERBUCE: 38-21(53313) B
CURRENT APPLICATION NUMBER: US/10/425,114
CURRENT FILING DATE: 2003-04-28
NUMBER OF SEQ ID NOS: 73128
SEQ ID NO 70238
LENGTH: 648
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         390 NEKVQDLLLLDVTFLSLGLETAGGVMTVLIPRNTTIPTKKEQVFSTYSDNQPGVLIQVXE 449
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  62 GERAMTKDNNLLGRFELSGIPPAPRGVPQIEVTFDIDANGILNVTATDKSTGKANKITIT 121
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   122 NDKGRLSKEEIERMVQEAEKYKAEDEVQRERVSAKNALESYAFNMKSAVEDEGLKGKISE 181
                                                                                                           182 ADKKVVLDKCQEVISWLDANTLAEKDEFEHKRKELEQVCNPIISGLYQGAGGP--GPGGF
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 2 SENVQDLLLLDVAPLSLGLETAGGVMTALIKRNSTIPTKQTQIFTTYSDNQPGVLIQVYE
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US-10-425-114-70238
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                                                                                                                                                                                                                                                                                                                               US-10-425-114-70238
; Sequence 70238, Application US/10425114
; Publication No. US20040034888A1
; GENERAL INFORMATION:
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                                                                                                                                                                               240 GAOGPKGGSGSGPTIEEVD 258
                                                                                                                                                                                                                                554 DEDAPAGSGGPGPKIEEVD 572
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Kovalic, David K.
Screen, Steven E
Tabaska, Jack E
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ORGANISM: Zea mays
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APPLICANT:
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APPLICANT:
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Publication No. US20040034888A1

GENERAL INFORMATION:

APPLICANT: Liu, Jingdong

APPLICANT: Zhou, Yihua

APPLICANT: Screen, Steven E

APPLICANT: Screen, Steven E

APPLICANT: Cao, Yongwai

TITLE OF INVENTION: Nucleic Acid Molecules and Other Molecules Associated With

TITLE OF INVENTION: Plants and Uses Thereof for Plant Improvement

FILE REPERENCE: 38-21(5313)B

CURRENT PILING DATE: 2003-04-28

NUMBER OF SEQ ID NOS: 73128
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     314 NEKVODLLLLDVTPLSLGLETAGGVMTVLIPRNTTIPTKKEQVFSTYSDNQPGVLIQVYE 373
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                                                                                                                                                                                                                                                                                                                                                                                                        391 NEKVODLILLDVTPLSQGLETAGGVMTVLIPRNTTIPTKKEQVFSTYSDNQPGVLIQVYE 450
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                NDKGRLSKEEIERMVQEAEKYKAEDEVQRERVSAKNALESYAFNMKSAVEDEGLKGKISE 181
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                                                                                                                                                                                                                                                     Query Match 71.5%; Score 939.5; DB 16; Length Best Local Similarity 70.4%; Pred. No. 1.2e-65; Matches 183; Conservative 29; Mismatches 45; Indels
                                                                                                                                                                            ; OTHER INFORMATION: Clone ID: PAT_MRT4530_10728C.1.pep
US-10-437-963-106268
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CURRENT FILING DATE: 2003-05-14
WINDER OF SEQ ID NOS: 204966
SEQ ID NO 106268
LENGTH: 650
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Matches 180; Conservative
                                                                                                        TYPE: PRT
ORGANISM: Oryza sativa
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ORGANISM: Zea mays
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LENGTH: 572
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Sequence 58888, Application US/10425114

Publication.No. US20040034888A1

GENERAL INFORMATION:
GENERAL INFORMATION:
APPLICANT: Liu, Jingdong
APPLICANT: Soreen, Steven E
APPLICANT: Cao, Yongwei
TITLE OF INVENTION: Plants and Uses Thereof for Plant Improvement
TITLE OF INVENTION: Plants and Uses Thereof for Plant Improvement
CURRENT APPLICANT: 38-21(53313)8
CURRENT APPLICATION NUMBER: US/10/425,114
CURRENT APPLICATION NUMBER: US/10/425,114
SEQ ID NO 58888
SEQ ID NO 58888
                                                                                                                                                                                               575 DDKKKIEDAIDAAISWLDANQLAEADEFDDKWKELESLCNPIIAKMYQGAGADMGGSGGM 634
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       182 ADKKKVLDKCQEVISWLDANTLAEKDEFEHKRKELEQVCNPIISGLYQGAGGP--GPGGF
                                                                              NDKGRLSKERIERMVQEAEKYKAEDBVQRERVSAKNALESYAFNMKSAVEDEGLKGKISE
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Best Local Similarity 69.5%; Pred. No. 1.3e-65;
Matches 180; Conservative 32; Mismatches 45;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ; OTHER INFORMATION: Clone ID: 700472543_FLI.pep
US-10-425-114-58888
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Publication No. US20040034888A1
APPLICANT: Liu, Jingdong
APPLICANT: Zhou, Yihua
                                                                                                                                                                                                                                                             240 GAQGPKGGSGSGPTIEEVD 258
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ORGANISM: Zea mays
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US-10-425-114-59160
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TITLE OF INVENTION: Nucleic Acid Molecules and Other Molecules Associated With TITLE OF INVENTION: Plants and Uses Thereof for Plant Improvement FILE REFERENCE: 38-21 (53313) B CURRENT APPLICATION NUMBER: US/10/425,114 CURRENT FILING DATE: 2003-04-28 SEQ ID NOS: 73128 SEQ ID NOS: 73128 LENGTH: 653
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APPLICANT: Liu, Jingdong
APPLICANT: Zhou, Yihua
APPLICANT: Screen, Steven E
APPLICANT: Screen, Steven E
APPLICANT: Tabaska, Jack E
APPLICANT: Tabaska, Jack E
APPLICANT: Tabaska, Jack E
APPLICANT: Tabaska, Jack E
APPLICANT: Tabaska, Jack E
APPLICANT: Tabaska, Jack E
APPLICANT: Tabaska, Jack E
APPLICANT: Tabaska, Jack E
APPLICANT: Tabaska, Jack E
APPLICANT: Sologuei E
TITLE OF INVENTION: Plants and Uses Thereof for Plant Improvement
FILE REPERENCE: 38-21(53313)B
CURRENT APPLICATION NUMBER: Us/10/425,114
CURRENT PILING DATE: 2003-04-28
NUMBER OF SEQ ID NOS: 73128
SEQ ID NO 58627
LENGTH: 653
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71.5%; Score 939; DB 15;
Best Local Similarity 69.5%; Pred. No. 1.3e-65;
Matches 180; Conservative 32; Mismatches 45;
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69.5%; Pred. No. 1.3e-65;
ive 32; Mismatches 45;
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US-10-425-114-56213
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US-10-425-114-58627
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Sequence 58627, Application US/10425114
; Publication No. US20040034888A1
; GENERAL INFORMATION:
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Best Local Similarity 69.5
Matches 180; Conservative
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ORGANISM: Zea mays
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us-09-646-831

**PAPLICANT: Kovalic, David K.

**APPLICANT: Screen, Steven E

**APPLICANT: Tabaska, Jack E

**APPLICANT: Tabaska, Jack E

**APPLICANT: Tabaska, Jack E

**APPLICANT: Tabaska, Jack E

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**APPLICANT: Tabaska, Jack E

**APPLICANT: Tabaska, Jack E

**APPLICANT: Tabaska, Jack E

**APPLICANT: Tabaska, Jack E

**TITLE OF INVENTION: Plants and Uses Thereof for Plant Improvement

**PITLE OF INVENTION: Plants and Uses Thereof for Plant Improvement

**TITLE OF INVENTION: Plants and Uses Thereof for Plant Improvement

**CURRENT APPLICATION NUMBER: US/10/425,114

**CURRENT PILLING DATE: 2003-04-28

**NUMBER OF SEQ ID NOS: 73128

**LENGTH: 653

**TYPE: ...
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Publication No. US20040034888A1

Publication No. US2004003488BA1

GENERAL INFORMATION:

APPLICANT: Zhou, Yihua

APPLICANT: Screen, Steven E

APPLICANT: Tabaska, Jack E

APPLICANT: Tabaska, Jack E

APPLICANT: Tabaska, Jack E

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Best Local Similarity 69.5%; Pred. No. 1.3e-65;
Matches 180; Conservative 32; Mismatches 45; Indels
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US-10-425-114-59160
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US-10-425-114-60382
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       240 GAQGPKGGSGSGPTIEEVD 258
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Matches 180; Conservative
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ORGANISM: Zea mays
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ORGANISM: Zea mays
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2 SENVQDLLLLDVAPLSLGLETAGGVMTALIKRNSTIPTKQTQIFTTYSDNQPGVLIQVYE 61

Gaps

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Sequence 6251, Application US/10425114

Sequence 6251, Application No. US2004003488A1

GENERAL INFORMATION:

APPLICANT: Liu, Jingdong

APPLICANT: Liu, Jingdong

APPLICANT: Screen, Steven E

APPLICANT: Screen, Steven E

APPLICANT: Tabaska, Jack E

APPLICANT: Tabaska, Jack E

APPLICANT: Pabaska, Jack E

APPLICANT: Pabaska, Jack E

APPLICANT: Pabaska Use E

APPLICANT: Cao, Yongwei

TITLE OF INVENTION: Nucleic Acid Molecules and Other Molecules Associated With

TITLE OF INVENTION: Plants and Uses Thereof for Plant Improvement

FILE REFERENCE: 38-21(53313)B

CURRENT APPLICATION NUMBER: US/10/425,114

CURRENT PILING DATE: 2003-04-28

NUMBER OF SEQ ID NOS: 73128

SEQ ID NO 62531

LENGTH: 653
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                                                                                   62 GERAMTKDNNLLGRFELSGIPPAPRGVPQIEVTFDIDANGILNVTATDKSTGKANKITIT 121
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Best Local Similarity 69.5%; Pred. No. 1.3e-65;
Matches 180; Conservative 32; Mismatches 45;
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US-10-425-114-62531
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; Sequence 62532, Application US/10425114
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69.5%; Pred. No. 1.3e-65;
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Best Local Similarity 69.5%
Matches 180; Conservative
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Matches 180; Conservative
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APPLICANT: Liu, Jingdong
APPLICANT: Zhou, Yihua
APPLICANT: Screen, Steven E
APPLICANT: Screen, Steven E
APPLICANT: Tabaska, Jack E
APPLICANT: Tabaska, Jack E
APPLICANT: Tabaska, Jack E
APPLICANT: Tabaska, Jack E
APPLICANT: Cor NUMENTION: Nucleic Acid Molecules and Other Molecules Associated With
TITLE OF INVENTION: Plants and Uses Thereof for Plant Improvement
TITLE OF INVENTION: VINNER: 2003-04-28
CURRENT FILING DATE: 2003-04-28
NUMBER OF SEQ ID NOS: 73128
SEQ ID NOS: 73128
                                                                                                                            APPLICANT: Cao, Yorgwei
TITLE OF INVENTION: Nucleic Acid Molecules and Other Molecules Associated With
TITLE OF INVENTION: Plants and Uses Thereof for Plant Improvement
FILE REFERENCE: 38-21(53313)8
CURRENT APPLICATION NUMBER: US/10/425,114
CURRENT FILING DATE: 2003-04-28
NUMBER OF SEQ ID NOS: 73128
SEQ ID NO 62532
LENGTH: 653
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US-10-425-114-62656
                                                                                                                                                                                                                                                                                                                                                                                                              71.5%; Score 939; DB 15; 69.5%; Pred. No. 1.3e-65; live 32; Mismatches 45;
                                                                                                                                                                                                                                                                                                                                                         ; OTHER INFORMATION: Clone ID: 700477624_FLI.pep
US-10-425-114-62532
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   US20040034888A1
                                    APPLICANT: Liu, Jingdong
APPLICANT: Zhou, Yihua
APPLICANT: Kovalic, David K.
APPLICANT: Screen, Steven E
APPLICANT: Tabaska, Jack E
                                                                                                                                                                                                                                                                                                                                                                                                                                 Best Local Similarity 69.59
Matches 180; Conservative
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ORGANISM: Zea mays
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DB 15; Length 653;

Score 939;

71.5%;

Query Match

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APPLICANT: Zhou, Yihusa APPLICANT: Zhou, Yihusa APPLICANT: Zhou, Yihusa APPLICANT: Kovalic, David K. APPLICANT: Screen, Steven B APPLICANT: Screen, Steven B APPLICANT: Cao, Yongwei TITLE OF INVENTION: Nucleic Acid Molecules and Other Molecules Associated With TITLE OF INVENTION: Plants and Uses Thereof for Plant Improvement FILE REFERENCE: 38-21(53313)B CURRENT APPLICATION NUMBER: US/10/425,114 CURRENT APPLICATION NUMBER: US/203-04-28 NUMBER OF SEQ ID NOS: 73128 SEQ ID NO 67148 LENGTHS.
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                                             2 SENVODLLLLDVAPLSLGLETAGGVMTALIKRNSTIPTKQTQIFTTYSDNQPGVLIQVYE
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Indels
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US-10-425-114-67148
  45;
32; Mismatches
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ORGANISM: Zea mays
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Squence 6822, Application US/10425114

Squence 6822, Application US/10425114

Publication No. US20040034888A1

GENERAL INFORMATION:

APPLICANT: Liu, Jingdong

APPLICANT: Liu, Jingdong

APPLICANT: Liu, Jingdong

APPLICANT: Tabaska, Jack E

APPLICANT: Tabaska, Jack E

APPLICANT: Tabaska, Jack E

APPLICANT: Tabaska, Jack E

APPLICANT: Tabaska, Jack E

APPLICANT: Por INVENTION: Nocleic Acid Molecules and Other Molecules Associated With

TITLE OF INVENTION: Nocleic Acid Molecules and Other Molecules Associated With

TITLE OF INVENTION: Norleic Acid Molecules and Other Molecules

CURRENT APPLICATION NUMBER: US/10/425,114

CURRENT FILING DATE: 2003-04-28

NUMBER OF SEQ ID NOS: 73128

LENGTH: 653
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Publication No. US20040034888A1

GENERAL INFORMATION:

GENERAL INFORMATION:

APPLICANT: Liu, Jingdong

APPLICANT: Shou, Yihua

APPLICANT: Screen, Steven E

APPLICANT: Tabaska, Jack E

APPLICANT: Tabaska, Jack E

APPLICANT: Tabaska, Jack E

APPLICANT: Tabaska, Jack E

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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ; OTHER INFORMATION: Clone ID: UC-ZMFLB73264B06_FLI.pep
US-10-425-114-68232
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ORGANISM: Zea mays
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ORGANISM: Zea mays
FEATURE:
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US-10-425-114-69239
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APPLICANT: Zhou, Yihua
APPLICANT: Zhou, Yihua
APPLICANT: Screen, Steven E
APPLICANT: Screen, Steven E
APPLICANT: Green, Steven E
APPLICANT: Tabaska, Jack E
APPLICANT: Cao, Yongwei
TITLE OF INVENTION: Plants and Uses Thereof for Plant Improvement
FILE REFERENCE: 38-21(53313) B
CURRENT FILING DATE: 2003-04-28
NUMBER OF SEQ ID NOS: 73128
SEQ ID NO 69306
LENGTH: 653
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                                                                            Length 653;
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71.5%; Score 939; DB 15; Length 653;
Best Local Similarity 69.5%; Pred. No. 1.3e-65;
Matches 180; Conservative 32; Mismatches 45; Indels
                                                                                                                                 Indels
, OTHER INFORMATION: Clone ID: UC-ZMFLMO17203G05_FLI.pep
US-10-425-114-69239
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US-10-425-114-69306
                                                                                                                                    45;
                                                                            Query Match
71.5%; Score 939; DB 15;
Best Local Similarity 69.5%; Pred. No. 1.3e-65;
Matches 180; Conservative 32; Mismatches 45;
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Publication No. US20040034888A1
GENERAL INFORMATION:
APPLICANT: Liu, Jingdong
APPLICANT: Zhou, Yihua
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                                                                            Query Match
Best Local Similarity
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Best Local Similarity 69.5
Matches 180; Conservative
                      TYPE: PRT ORGANISM: Zea mays FEATURE:
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                                                                                                     US-10-425-114-72128
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                                                                                                           Sequence 70649, Application US/10425114
; Sequence 70649, Application US/10425114
; Publication No. US20040034888A1
; GENERAL INFORMATION:
   APPLICANT: Liu, Jingdong
; APPLICANT: Liu, Jingdong
; APPLICANT: Abou, Yihua
; APPLICANT: Abou, Yihua
; APPLICANT: Cao, Yongwei
; APPLICANT: Cao, Yongwei
; TITLE OF INVENTION: Nucleic Acid Molecules and Other Molecules Associated With
; TITLE OF INVENTION: Nucleic Acid Molecules and Other Molecules Associated With
; TITLE OF INVENTION: NUMBER: US/10/425,114
; CURRENT FILING DATE: 2003-04-28
; NUMBER OF SEQ ID NOS: 73128
; SEQ ID NO 70649
LENGTH: 653
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; Bublication No. US20040034888A1
; GENERAL INFORMATION:
; APPLICANT: Liu, Jingdong
; APPLICANT: Zhou, Yihua
; APPLICANT: Screen, Steven E
; APPLICANT: Cao, Yongwei
; TITLE OF INVENTION: Nucleic Acid Molecules and Other Molecules Associated With
; TITLE OF INVENTION: Nucleic Acid Molecules Thereof for Plant Improvement
; FILE REFERENCE: 38-21(53313)B
; CURRENT APPLICATION NUMBER: US/10/425,114
; CURRENT FILING DATE: 2003-04-28
; NUMBER OF SEQ ID NOS: 73128
; SEQ ID NO 72128
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US-10-425-114-70649
240 GAQGPKGGSGSGPTIEEVD 258
                                     635 DEDAPAGSGGPGPKIEEVD 653
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APPLICANT: Zhou, Yihua
APPLICANT: Zhou, Yihua
APPLICANT: Kovalic, David K.
APPLICANT: Screen, Steven B
APPLICANT: Green, Steven B
APPLICANT: Tabaska, Jack B
APPLICANT: Cao, Yongwei
TITLE OF INVENTION: Nucleic Acid Molecules and Other Molecules Associated With
TITLE OF INVENTION: Plants and Uses Thereof for Plant Improvement
FILE REPRENCE: 38-21(53313) B
CURRENT PELICAND NUMBER: US/10/425,114
CURRENT FILING DATE: 2003-04-28
NUMBER OF SEQ ID NOS: 73128
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                                                                                                 Query Match
71.5%; Score 939; DB 15; Length 653;
Best Local Similarity 69.5%; Pred. No. 1.3e-65;
Matches 180; Conservative 32; Mismatches 45; Indels
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OTHER INFORMATION: Clone ID: LIB3591-108-G8_FLI.pep
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69.5%; Pred. No. 1.3e-65;
iive 32; Mismatches 45;
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US-10-425-114-72427
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Publication No. US20040034888A1
GENERAL INPORMATION:
APPLICANT: Liu, Jingdong
APPLICANT: Zhou, Yihua
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RESULT 88
US-10-425-114-55225
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; Sequence 72533, Application No. US20040034888A1
; Publication No. US2004003488BA1
; GENERAL INFORMATION:
; APPLICANT: Liu, Jingdong
; APPLICANT: Zhou, Yihua
; APPLICANT: Screen, Steven E
; APPLICANT: Cao, Yongwei
; TITLE OF INVENTION: Nucleic Acid Molecules and Other Molecules Associated With
; TITLE OF INVENTION: Plants and Uses Thereof for Plant Improvement
; TITLE OF INVENTION: Plants and Uses Thereof for Plant Improvement
; TITLE OF INVENTION: NUMBER: US/10/425,114
; CURRENT APPLICATION NUMBER: US/10/425,114
; NUMBER OF SEQ ID NOS: 73128
; SEQ ID NO 72533
LENGTH: 653
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Publication No. US20040034888A1
GENERAL INFORMATION:
GENERAL INIO, Jingdong
APPLICANT: Zhou, Yihua
APPLICANT: Screen, Steven E
APPLICANT: Tabaska, Jack E
APPLICANT: Tabaska, Jack E
APPLICANT: Govern, Steven E
TITLE OF INVENTION: Nucleic Acid Molecules and Other Molecules Associated With
TITLE OF INVENTION: Plants and Uses Thereof for Plant Improvement
FILE REFERENCE: 38-21(53313)B
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182 ADKKKVLDKCQEVISWLDANTLAEKDEPEHKRKELEQVCNPIISGLYQGAGGP--GPGGF 239
                          395 NEKVQDLLLLDVTPLSLGLETAGGWTVLIPRNTTIPTKKGGVFSTYSDNQPGVLIQVYE 454
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69.5%; Pred. No. 1.3e-65;
tive 32; Mismatches 45;
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ORGANISM: Zea mays
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US-10-425-114-38995
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APPLICANT: Liu, Jingdong
APPLICANT: Liu, Jingdong
APPLICANT: Zhou, Yihua
APPLICANT: Kovalic, David K.
APPLICANT: Screen, Steven E
APPLICANT: Screen, Jack E
APPLICANT: Tabaska, Jack E
APPLICANT: Tabaska, Jack E
APPLICANT: Tabaska, Jack E
APPLICANT: OF INVENTION: Nucleic Acid Molecules and Other Molecules Associated With
TITLE OF INVENTION: Plants and Uses Thereof for Plant Improvement
TITLE OF INVENTION: Plants and Uses Thereof for Plant Improvement
CURRENT APPLICATION NUMBER: US/10/425,114
CURRENT FILING DATE: 2003-04-28
NUMBER OF SEQ ID NOS: 73128
LENGTH: 652
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US-10-425-114-55225
                                                                                                                                                                                                                 ; OTHER INFORMATION: Clone ID: LIB3067-050-E8_FLI.pep
US-10-425-114-38995
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Part Local Similarity 69.9%; Pred. No. 1.5e-65;
Matches 181; Conservative 30; Mismatches 46;
CURRENT APPLICATION NUMBER: US/10/425,114
CURRENT FILING DATE: 2003-04-28
NUMBER OF SEQ ID NOS: 73128
LENGTH: 652
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ORGANISM: Zea mays
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APPLICANT: Zhou, Yihua
APPLICANT: Screen, Steven E
APPLICANT: Soreen, Steven E
APPLICANT: Tabaska, Jack E
APPLICANT: Tabaska, Jack E
APPLICANT: Tabaska, Jack E
APPLICANT: Tabaska, Jack E
APPLICANT: Tabaska, Jack E
APPLICANT: Tabaska, Jack E
APPLICANT: Tabaska, Jack E
APPLICANT: Tabaska, Jack E
APPLICANT: Soreen, Soreen, Soreen, Soreen, Soreen, Soreen, Soreen, Soreen, Soreen, Soreen, Soreen, Soreen, Soreen, Soreen, Soreen, Soreen, Soreen, Soreen, Soreen, Soreen, Soreen, Soreen, Soreen, Soreen, Soreen, Soreen, Soreen, Soreen, Soreen, Soreen, Soreen, Soreen, Soreen, Soreen, Soreen, Soreen, Soreen, Soreen, Soreen, Soreen, Soreen, Soreen, Soreen, Soreen, Soreen, Soreen, Soreen, Soreen, Soreen, Soreen, Soreen, Soreen, Soreen, Soreen, Soreen, Soreen, Soreen, Soreen, Soreen, Soreen, Soreen, Soreen, Soreen, Soreen, Soreen, Soreen, Soreen, Soreen, Soreen, Soreen, Soreen, Soreen, Soreen, Soreen, Soreen, Soreen, Soreen, Soreen, Soreen, Soreen, Soreen, Soreen, Soreen, Soreen, Soreen, Soreen, Soreen, Soreen, Soreen, Soreen, Soreen, Soreen, Soreen, Soreen, Soreen, Soreen, Soreen, Soreen, Soreen, Soreen, Soreen, Soreen, Soreen, Soreen, Soreen, Soreen, Soreen, Soreen, Soreen, Soreen, Soreen, Soreen, Soreen, Soreen, Soreen, Soreen, Soreen, Soreen, Soreen, Soreen, Soreen, Soreen, Soreen, Soreen, Soreen, Soreen, Soreen, Soreen, Soreen, Soreen, Soreen, Soreen, Soreen, Soreen, Soreen, Soreen, Soreen, Soreen, Soreen, Soreen, Soreen, Soreen, Soreen, Soreen, Soreen, Soreen, Soreen, Soreen, Soreen, Soreen, Soreen, Soreen, Soreen, Soreen, Soreen, Soreen, Soreen, Soreen, Soreen, Soreen, Soreen, Soreen, Soreen, Soreen, Soreen, Soreen, Soreen, Soreen, Soreen, Soreen, Soreen, Soreen, Soreen, Soreen, Soreen, Soreen, Soreen, Soreen, Soreen, Soreen, Soreen, Soreen, Soreen, Soreen, Soreen, Soreen, Soreen, Soreen, Soreen, Soreen, Soreen, Soreen, Soreen, Soreen, Soreen, Soreen, Soreen, Soreen, Soreen, Soreen, Soreen, Soreen, Soreen, Soreen, Soreen, Soreen, Soreen, Soreen, Soreen, Soreen, Soreen, Soreen, Soreen, Soreen, Soree
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   NDKGRLSKEEIERMVQEAEKYKAEDEVQRERVSAKNALESYAFNMKSAVEDEGLKGKISE 181
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69.9%; Pred. No. 1.5e-65;
tive 30; Mismatches 46;
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Publication No. US20040034888A1
GENERAL INFORMATION:
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Matches 181; Conservative
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   TYPE: PRT
ORGANISM: Zea mays
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                RESULT 90
US-10-425-114-61345
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Sequence 61345, Application US/10425114
Publication No. US20040034888A1
GENERAL INFORMATION:
APPLICANT: Liu, Jingdong
APPLICANT: Zhou, Yihua
APPLICANT: Screen, Steven E
APPLICANT: Screen, Steven E
APPLICANT: Tabaska, Jack E

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APPLICANT: Cao, Yongwei
TITLE OF INVENTION: Nucleic Acid Molecules and Other Molecules Associated With
TITLE OF INVENTION: Plants and Uses Thereof for Plant Improvement
FILE REPRENCE: 38-21(53313) B
CURRENT PILING DATE: US/10/425,114
CURRENT FILING DATE: 2003-04-28
NUMBER OF SEQ ID NOS: 73128
SEQ ID NO 61345
LENGTH: 652
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APPLICANT: Zhou, Yihua
APPLICANT: Kovalic, David K.
APPLICANT: Screen, Steven E
APPLICANT: Cao, Yongwei
TITLE OF INVENTION: Plants and Uses Thereof for Plant Improvement
FILE REFERENCE: 38-21(53313) B
CURRENT APPLICATION NUMBER: US/10/425,114
CURRENT APPLICATION NUMBER: US/10/425,114
NUMBER OF SEQ ID NOS: 73128
SEQ ID NO 62560
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69.9%; Pred. No. 1.5e-65;
iive 30; Mismatches 46;
                                                                                                                                                                                                                                                                                                                                                                Query Match 71.4%; Score 938; DB 15;
Best Local Similarity 69.9%; Pred. No. 1.5e-65;
Matches 181; Conservative 30; Mismatches 46;
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US-10-425-114-62560
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Ubblication No. US20040034888A1
GENERAL INFORMATION:
APPLICANT: Liu, Jingdong
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Best Local Similarity 69.99
Matches 181; Conservative
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ORGANISM: Zea mays
FEATURE:
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| Publication No. US20040034888A1
| GENERAL INPORMATION:
| GENERAL INPORMATION:
| APPLICANT: Zhou, Yihua
| APPLICANT: Zhou, Yihua
| APPLICANT: Corean, Steven E
| APPLICANT: Tabaska, Jack E
| APPLICANT: Tabaska, Jack E
| APPLICANT: Green, Yongwei
| TITLE OF INVENTION: Nucleic Acid Molecules and Other Molecules Associated With
| TITLE OF INVENTION: Plants and Uses Thereof for Plant Improvement
| TITLE OF INVENTION: NUMBER: US/10/425,114
| CURRENT FILING DATE: 2003-04-28
| CURRENT FILING DATE: 2003-04-28
                                                                       454 GERTRIRDINILIGKFELSGIPPAPRGVPQITVCFDIDANGILINVSAEDKTTGQKNKITIT 513
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 GERAMTKDNNLLGRFELSGIPPAPRGVPQIEVTFDIDANGILNVTATDKSTGKANKITIT 121
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71.4%; Score 938; DB 15; Length 652;
Best Local Similarity 69.9%; Pred. No. 1.5e-65;
Matches 181; Conservative 30; Mismatches 46; Indels
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ORGANISM: Zea mays
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RESULT 93
US-10-425-114-63457
US-10-425-114-63457, Application US/10425114
; Publication No. US/0040034888A1
; GENERAL INFORMATION:

APPLICANT: Liu, Jingdong

```
APPLICANT: Tabaska, Jack E
APPLICANT: Tabaska, Jack E
APPLICANT: Cao, Yongwei
TITLE OF INVENTION: Nucleic Acid Molecules and Other Molecules Associated With
TITLE OF INVENTION: Plants and Uses Thereof for Plant Improvement
FILE REFERENCE: 38-21(53313)B
CURRENT APPLICATION NUMBER: US/10/425,114
CURRENT FILING DATE: 2003-04-28
NUMBER OF SEQ ID NOS: 73128
SEQ ID NO 63457
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APPLICANT: Liu, Jingdong
APPLICANT: Coun, Yihua
APPLICANT: Screen, Steven E
APPLICANT: Screen, Jack E
APPLICANT: Tabaska, Jack E
APPLICANT: Tabaska, Jack E
APPLICANT: Tabaska, Jack E
APPLICANT: Co. Yongwei
TITLE OF INVENTION: Plants and Uses Thereof for Plant Improvement
TITLE OF INVENTION: NUMBER: US/10/425,114
CURRENT APPLICATION NUMBER: US/10/425,114
CURRENT FILING DATE: 2003-04-28
NUMBER OF SEQ ID NOS: 73128
SEQ ID NO 63505
LENGTH: 652
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US-10-425-114-63457
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US-10-425-114-63505
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Publication No. US20040034888A1
GENERAL INFORMATION:
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Zhou, Yihua
Kovalic, David K.
Screen, Steven E
Tabaska, Jack E
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ORGANISM: Zea mays
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US-10-425-114-54413
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APPLICANT: Zhou, Yihua
APPLICANT: Kovalic, David K.
APPLICANT: Scheen, Steven E
APPLICANT: Scheen, Steven E
APPLICANT: Cao, Yongwei
TITLE OF INVENTION: Nucleic Acid Molecules and Other Molecules Associated With
TITLE OF INVENTION: Plants and Uses Thereof for Plant Improvement
FILE REPERBENCE: 38-21(53313)8
CURRENT APPLICATION NUMBER: US/10/425,114
CURRENT PILING DATE: 2003-04-28
NUMBER OF SEQ ID NOS: 73128
SEQ ID NO 65274
                                                                                      122 NDKGRLSKEEIERMVQEAEKYKAEDEVQRERVSAKNALESYAFNWKSAVEDEGLKGKISE 181
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US-10-425-114-65274
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ORGANISM: Zea mays
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RESULT 96 US-10-437-963-193938

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APPLICANT: La Rosa, Thomas J.
APPLICANT: La Rosa, Thomas J.
APPLICANT: Execution, David K.
APPLICANT: Shou, Yihua
APPLICANT: Shou, Yihua
APPLICANT: Boukharov, Andrey A.
APPLICANT: Buckharov, Andrey A.
APPLICANT: Bit bender Should be and Other Molecules Associated With
TITLE OF INVENTION: Plants and Uses Thereof for Plant Improvement
FILE REPERBNCE: 38-21(5321)B
CURRENT APPLICATION NUMBER: US/10/437,963
CURRENT FILING DATE: 2003-05-14
NUMBER OF SEQ ID NOS: 204966
SEQ ID NO 193938
LENGTH: 649
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; Sequence 54413, Application US/10425114
; Publication No. US20040034888A1
; GENERAL INFORMATION:
; APPLICANT: Zhou, Yihua
; APPLICANT: Zhou, Yihua
; APPLICANT: Acaren, Screen, Steven E
; APPLICANT: Cao, Yongwei
; TITLE OF INVENTION: Nucleic Acid Molecules and Other Molecules Associated With
; TITLE OF INVENTION: Nucleic Acid Molecules and Other Molecules Associated With
; TITLE OF INVENTION: Nucleic Acid Molecules Thereof for Plant Improvement
; TITLE OF INVENTION: Plants and Uses Thereof for Plant Improvement
; TITLE OF INVENTION NUMBER: US/10/425,114
; CURRENT APPLICATION NUMBER: US/10/425,114
; CURRENT FILING DATE: 2003-04-28
; NUMBER OF SEQ ID NOS: 73128
; SEQ ID NO 54413
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ORGANISM: Zea mays
FEATURE:
OTHER INFORMATION: Clone ID: UC-ZMFLB73199A09_FLI.pep
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US-10-437-963-193938
Sequence 193938, Application US/10437963
Publication No. US20040123343A1
GENERAL INFORMATION:
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Matches 179; Conservative
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Sequence 65502, Application US/10425114

Publication No. US20040034888A1

GENERAL INFORMATION:
APPLICANT: Liu, Jingdong
APPLICANT: Liu, Jingdong
APPLICANT: Tobou, Yihua
APPLICANT: Soreen, Steven B
APPLICANT: Tabaska Jack E
APPLICANT: Tabaska Jack E
APPLICANT: Gao, Yongwei
TITLE OF INVENTION: Nucleic Acid Molecules and Other Molecules Associated With
TITLE OF INVENTION: Plants and Uses Thereof for Plant Improvement
TITLE OF INVENTION NUMBER: US/10/425,114
CURRENT APPLICATION NUMBER: US/10/425,114

CURRENT FILING DATE: 2003-04-28

NUMBER OF SEQ ID NOS: 73128
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APPLICANT: CONTRERAS, ROLAND HENRI
APPLICANT: CONTRERAS, ROLAND HENRI
APPLICANT: EBERHARDY: INES
APPLICANT: RESTANDS, RIEKA JOSEPHINA
APPLICANT: RESTANDS, RIEKA JOSEPHINA
APPLICANT: RESTANDS, RIEKA JOSEPHINA
TITLE OF INVENTION: BAX-RESPONSIVE GENES FOR BRUG TARGET IDENTIFICATION IN
TITLE OF INVENTION: YEAST AND FUNGI
FILE REFERENCE: JAB-1667
CURRENT APPLICATION NUMBER: 2003-06-19
FRIOR APPLICATION NUMBER: EP 00870318.3
FRIOR APPLICATION NUMBER: EP 10870002.1
FRIOR APPLICATION NUMBER: EP 01870003.9
FRIOR APPLICATION NUMBER: EP 01870003.9
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US-10-425-114-65502
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639 DEDAPAAGGSAAGPKIEEVD 658
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Best Local Similarity 68.8<sup>1</sup>
Matches 179; Conservative
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Sequence 57892, Application No. US20040034888A1

GENERAL INFORMATION:
GENERAL INFORMATION:
APPLICANT: Liu, Jingdong
APPLICANT: Screen, Steven E
APPLICANT: Screen, Steven E
APPLICANT: Cao, Yongwei
TITLE OF INVENTION: Nucleic Acid Molecules and Other Molecules Associated With
TITLE OF INVENTION: Nucleic Acid Molecules and Other Molecules Associated With
TITLE OF INVENTION: Nucleic Acid Molecules Thereof for Plant Improvement
FILE REFERENCE: 38-21(53313)B
CURRENT APPLICATION NUMBER: US/10/425,114
CURRENT FILING DATE: 2003-04-28
NUMBER OF SEQ ID NOS: 73128
SEQ ID NO S: 73128
LENGTH: 658
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                                                                                                                                                                                                                                                                                                                                                                           122 NDKGRLSKEBIERMVQEAEKYKAEDEVQRERVSAKNALESYAFNMKSAVEDEGLKGKISE 181
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                                                                                                                                                            2 SENVQDLLLLDVAPLSLGLETAGGVMTALIKRNSTIPTKQTQIFTTYSDNQPGVLIQVYE 61
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      2 SENVODILILDVAPLSLGLETAGGVMTALIKRNSTIPTKQTQIFTTYSDNQPGVLIQVYE 61
                                                                                                          Gaps
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Query Match 69.9%; Score 918.5; DB 15; Length Best Local Similarity 69.2%; Pred. No. 5.5e-64; Matches 180; Conservative 31; Mismatches 46; Indelş
                                                                                                       45; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ; OTHER INFORMATION: Clone ID: UC-ZMFLMO17117E05_FLI.pep
US-10-425-114-57892
                                                     DB 15;
                                                  70.1%; Score 920.5; DB 1 69.2%; Pred. No. 2.4e-64;
                                                                                                       32; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                240 GAQGP-KGGSGSGPTIEEVD 258
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  442 DEDAPAAGGSAAGPKIEEVD 461
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            240 GAQGP-KGGSGSGPTIEEVD 258
                                                                                                       Matches 180; Conservative
                                               Query Match
Best Local Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ORGANISM: Zea mays
US-10-425-114-54413
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62 GERAMTKDNNLLGRFELSGIPPAPRGVPQIEVTFDIDANGILNVTATDKSTGKANKITIT 121
                                                                                                                                                                                                                                                                                                         122 NDKGRLSKEEIERWVQEAEKYKAEDEVQRERVSAKNALESYAFNMKSAVEDEGLKGKISE 181
                                                                                                                                                                                                                                                                                                                                                                            182 ADKKKVLDKCOEVISWLDANTLAEKDEFEHKRKELEQVCNPIISGLYQGAGG----- 233
                                                                                                                                                                                                                      2 SENVQDLLLLDVAPLSLGLETAGGVMTALIKRNSTIPTKGTQIFTTYSDNQPGVLIQVYE 6.1
                                                                                                                                                                                            Gaps
                                                                                                                                                     Query Match
69.3%; Score 911; DB 16; Length 656;
Best Local Similarity 66.7%; Pred. No. 2.1e-63;
Matches 182; Conservative 28; Mismatches 47; Indels 16;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              624 PGAGGFPGGAPGAGGPGGATGGESSGPTVEEVD 656
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           234 PGPGGF----GAQGP---KGGSGSGPTIEEVD 258
; PRIOR FILING DATE: 2001-01-09; NUMBER OF SEQ ID NOS: 732; SOFTWARE: Parentin version 3.1; SEQ ID NO 536; LENGTH: 656; TYPE: PRT ORGANISM: Candida albicang US-10-451-467A-536
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